Lecture 1.

Obstetrics.

The Pelvis.

Is upper - true
lower - false.
Divided by ileo-pect: line & promontory of the sacrum.

False is formed by 2 illiac fossae, 2 last lumbar vert., & upper surf. of pubic arch, & posteriorly by muscles attached to l. vert. & ant'ly. by abdominal walls. Shape & distance betw. the illiac crests denote size of pelvis beneath, as do also the sup. ant. illiac spines.

True pelvis comprises ilium, ischium, pubes, sacrum & coccyx. Practically it is a cylinder looking

downwards & backwards when free of soft parts.

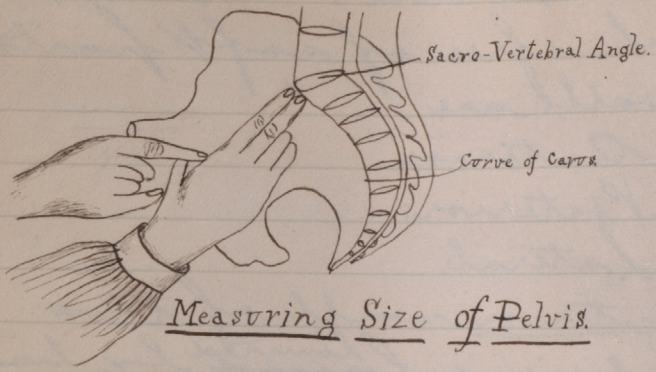
Walls are

1. Anterior.
2. Posterior.
3. Lateral.

1. Anterior wall of true pelvis is ~~formed~~ limited by line from ilio-pectineal eminence to ~~ischial~~ part of foramen ovale. It contains the pubic arch.

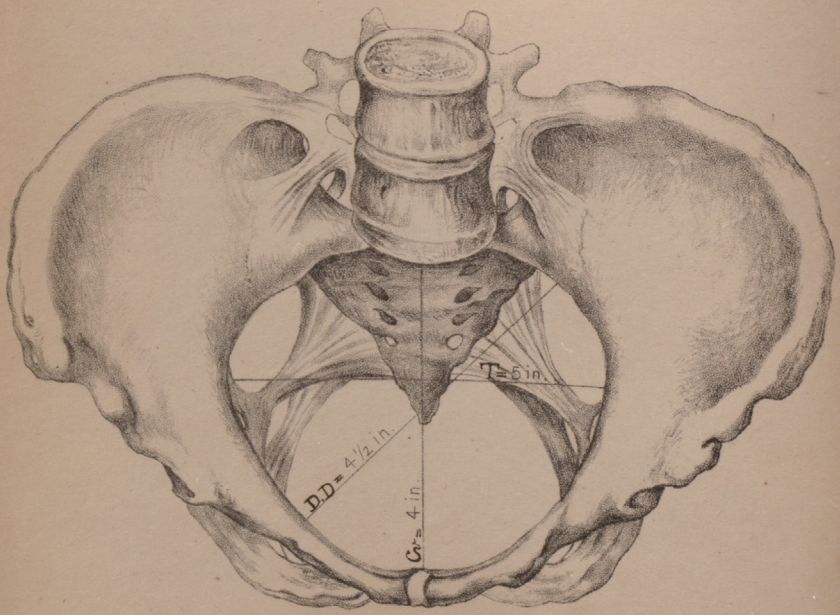
2. Lateral wall is all behind exc. part of foramen ovale ~~& that~~ in front of sacrum ~~is~~. It is partly bony & partly tendinous. Ant. part is bony; post. part chiefly tendinous, being formed by sacro-sciatic lig's.

3. Post. wall = sacrum & coccyx. Bet. upper surf. of sacrum & last lumbar vertebra is a wedge-



Measuring Size of Pelvis.

THE PELVIC INLET.



shaped cartilage being deeper in front than behind. This = "sacro-vertebral angle" is the only part of the pelvis where the size can be measured accurately. There are transverse lines on sacrum, & the upper one may be felt instead of the angle.

Post. wall is curved & called the "curve of Carus".

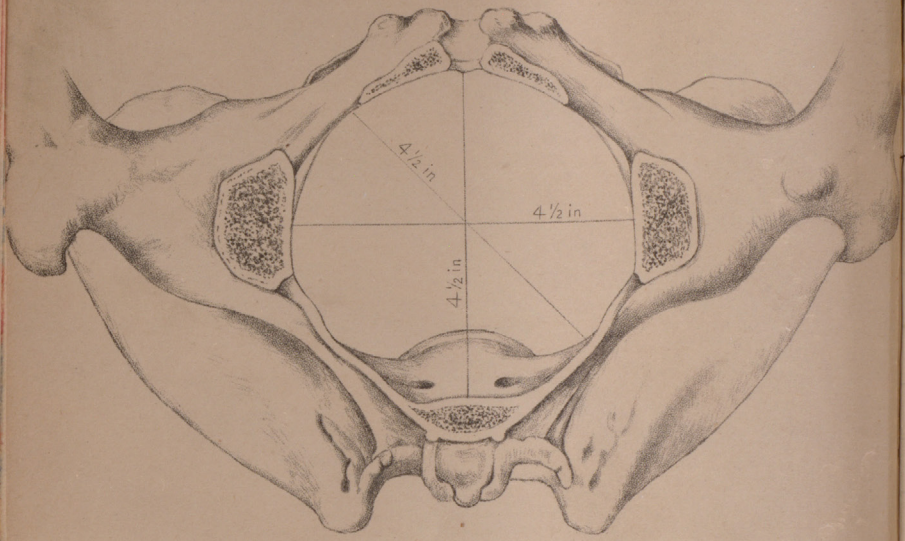
Sacro-Coccygeal Joint is mobile in most women & this enables the outlet to be enlarged by an inch. It sometimes is anchylosed, esp. in women up in years, & those of sedentary life.

Division of Pelvis.

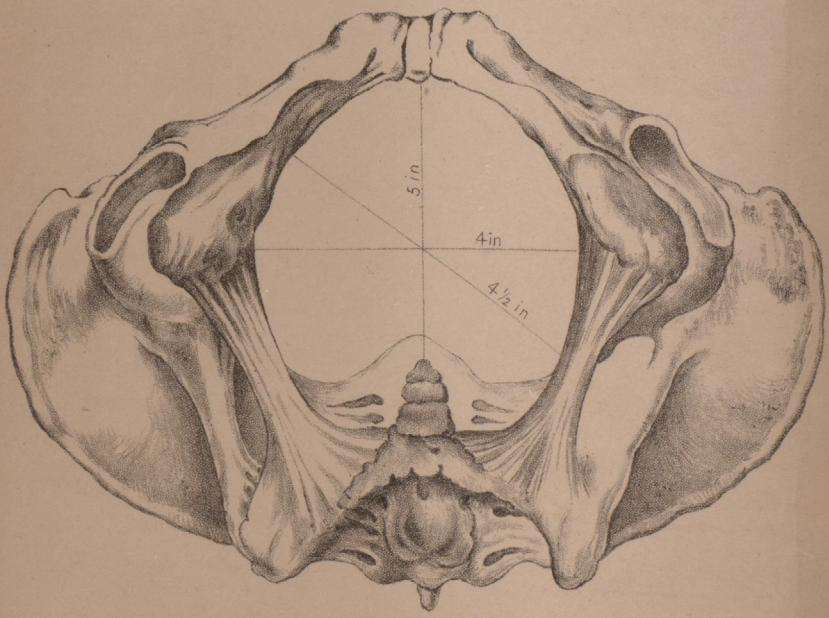
1. Brim. (Upper strait or Inlet.)
2. Cavity.
3. Outlet. (Lower Strait.)

1. Brim is linea-illeo-pectinea & promontary of sacrum.

THE PELVIC CAVITY.



THE PELVIC OUTLET



Form varies via influenced by promontory of sacrum. It is usually ~~in~~ an ellipse. May be heart-shaped, kidney shaped or round. Normal pelves may vary in thickness of the wall, solidity of bones, height, actual size, or (slightly) in form

2. Cavity is not of same size throughout. It is widest in middle & narrowest at the outlet. (Widest pt: is at mid: of pubes, upper edge of f: ovale, acetabula, & junction of 2nd & 3rd pieces of sacrum.

Lecture 2.

Narrow part = circle through end of sacrum, tubercle ischii & rami of pubes.

3. Outlet is divided into two triangles by line joining

THE PELVIS.

DIAMETERS OF THE BRIM.

1. Antero-posterior or Conjugate.

a. Diameter conjugata vera, Cv. = Between the middle of the sacral promontory and the point in the upper border of the symphysis pubis crossed by the *linea terminalis.*

b. Diameter conjugata diagonalis, Cd. = Between the middle of the promontory of the sacrum and the lower border of the symphysis pubis.

c. Diameter conjugata anatomicalis, Ca. = Between the middle of the sacral promontory and the upper border of the symphysis pubis.

2. Transverse.

Diameter transversa, T. = Between the most distant points on the right and left ilio-pectineal lines.

3. Oblique.

a. First Oblique = *Diameter diagonalis dextra, D.D.* Between the right sacro-iliac synchondrosis and the left pectineal eminence.

b. Second Oblique = *Diameter diagonalis laeva, D.L.* Between the left sacro-iliac synchondrosis and the right pectineal eminence.

Conjugata diagonalis ($\frac{3}{4}$ in. greater than conjugata vera) = $4\frac{3}{4}$ in.

Conjugata anatomicalis—$4\frac{1}{4}$ in. nearly.

Conjugata externalis = Between spine of last lumbar vertebra and symphysis pubis = 7 in.

Interspinous diameter.—10 inches.

Bis-iliac or intercristal.—$10\frac{1}{2}$ inches.

Vertical Measurements of True Pelvis.

(1.) From promontory to coccyx = *Posterior wall* = 5 inches.

(2.) From ilio-pectineal line to tuberosity of ischium = *Lateral wall* = $3\frac{3}{4}$ inches.

(3.) From upper to lower margin of symphysis pubis = *Anterior wall* = $1\frac{3}{4}$ inches.

the 2 tuber ischii. Anterior 4 is bony, post. one is chiefly ligamentous but has coccyx in the centre. Line joining ischial tuber vertex = 1 inch lower than that joining symphysis pubis tip of coccyx.

Diameters of Pelvis.

A "standard" pelvis is one chosen from a lot of women who have gone through normal labours.

Are 4 diameters

1. Antero-post. or Conjugate.
2. Transverse.
3. Right Oblique.
4. Left "

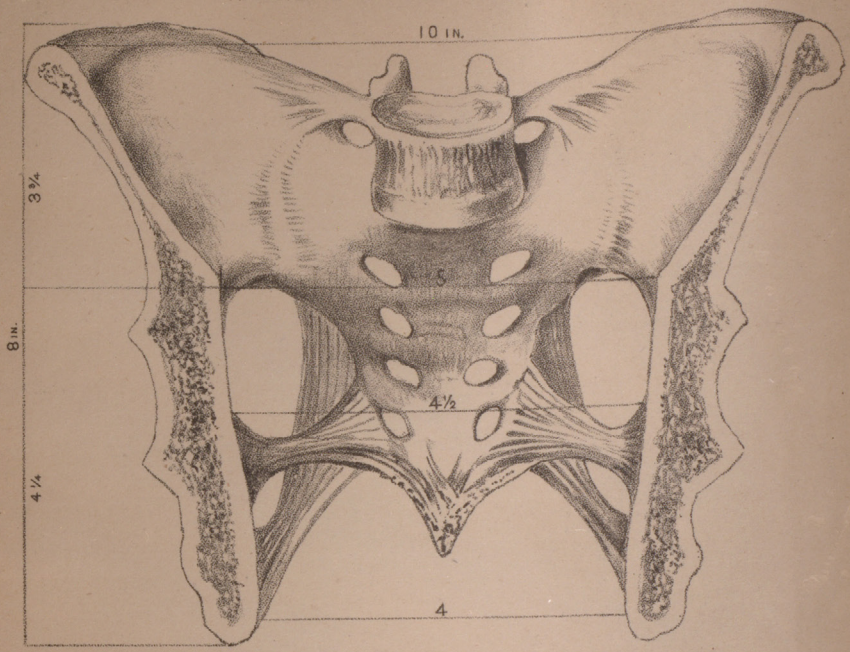
Antero-post. or Conjugate.

a. Conjugate Vera. = 4 in.

A normal pelvis is one in which (all else being normal) the Cv is 4 inches.

b. Conjugate Diagonalis is merely for starting the time

TRANSVERSE VERTICAL SECTION OF PELVIS.



DIAMETERS OF PELVIS

	Conjugate	Oblique	Transverse
INLET .	4	$4\frac{1}{2}$	5
CAVITY .	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$
OUTLET .	5	$4\frac{1}{2}$	4

conjugate. It is from 1/2 - 3/4 in. greater than the C.v. viz. 4 1/2 in. Depth, thickness & pitch of pubic arch causes variation in the conjugate.

c. Conjugata Anatomicalis = line from sacral promon. to outer edge of symphysis pubis.

d. External Conjugata is between spine of last lumbar vertebra & symphysis pubis. Measured by callipers is very uncertain. Distance = 7 in.
(C.E. = 7 - 3 = 4. 3 allows for thickness of sacrum & pubes)

2. Transverse. Lies nearer the sacrum than the pubes.
(In parturition, the t. d. used, is one got by bi-secting the conjugata vera)
Length is 7 in.

3. Oblique. Called right or left according to the acetabulum from which they start.

1-3 = Cau.
2-3 = Cv.
3-4 = Cd.

These come in touch with soft parts & so length can't be relied on. Rather unimportant.
Right side is usually little larger than left. Right oblique is larger than the left, due to rectum lying in the left side. Head usually takes advantage of this & lies in right oblique diameter.
Circumference of brim = 16 in.
Sacro-cotyloid diameter runs from sacrum to middle of cotyloid cavity.
Diameters of outlet = converse of those of the inlet.
In labour, head passes through big transverse, big oblique, & big conjugate diameters in order.

Muscles forming floor of pelvis are:—

1. { Levator Ani.
   Coccygeus.

2. { Sphincter Ani.
   " Vaginae.
   Transversus Perinei.

Lecture 3.

Soft Parts as they influence the Diameters.

Belly of illiacus fills up the illiac fossa, forming a soft cushion for the gravid uterus to rest on.

Psoas muscles are in front of sacro-illiac synchondroses, shortening each oblique diameter.

Pyriformis & obturator muscles, lying in front of sacrum & cotyloid cavity, diminish the conjugate & oblique diameters.

Muscles forming the floor of pelvis alter the form of outlet, causing it to look down & forwards.

Cv. of brim is altered by uterine walls & either by urethra or the two walls of the bladder, but, as a

rule, the bladder is drawn up into the abdomen during labour.

Rectum lessens the D. L.

Pelvic vessels & lymphatics may interfere with abnormal labours by becoming swollen & congested.

Should be described as

1. Those encroaching on pelvic space.
2. Those closing the opening of pelvis.

Relaxation of Ligaments.

Ligaments do not relax in women as they do in the cow, but there is always a certain amount of movement in the pelvic joints in all people.

During labour, the coccyx can be pushed back & the sacrum forwards.

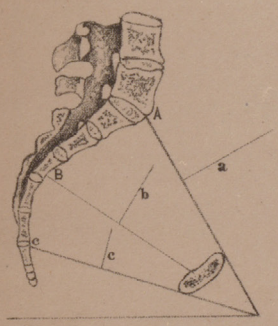
Planes of Pelvis.

When a person stands erect

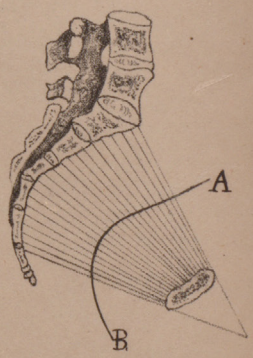
"Plane of cavity" runs from the middle of 3rd. piece of sacrum to middle of the symphysis pubis.

THE PLANES AND AXES OF PELVIS.

a. Axis of Brim.
b. " " Cavity.
c " " Outlet.



A = Plane of Brim.
B = " " Cavity.
C = " " Outlet.



AB = Axis of cavity.
or Curve of Carus.

the pelvis has a certain obliquity to the horizon.
Hold pelvis with pubes looking forwards & the acetabula looking downwards, the brim forming an angle with the horizon. (about 60°).
This oblique position helps to hold the viscera in place, as they rest on the symphysis pubis.
Are 3 planes. viz:-
1. Brim.
2. Cavity.
3. Outlet.
"Plane of brim" runs from the promontory of sacrum to the symphysis pubis (upper surf.)
As child's head passes down, it passes through each plane, & ∴ planes of head & pelvis are "parallel".
Inclined Planes.
A line drawn between the

~~[illegible]~~ ischio-pelvic-pelvic emissence divides the inner surf. into 2 planes Ant: one inclines down, forwards; post: down & backwards. These influence movements of head in parturition.

Axis of Pelvis.

Are the varying directions of child's head during parturition.

"Axis of brim" is a line drawn through the centre of plane of brim which would go through coccyx if projected backwards. This is very important in parturition. It may be represented by straight line from umbilicus to coccyx.

Lecture 4.

Axis of cavity is the line of incurvation i.e. curve of

Characteristics of Female Pelvis as compared with Male.

FEMALE PELVIS.

1. Bones lighter and smoother.
2. Iliac fossæ wider. Ilia more spread out.
3. Promontory less pronounced.
4. Brim more capacious.
5. Cavity shallow, *not* funnel-shaped.
6. Outlet wider.
7. Ischial tuberosities further apart.
8. Pubic arch wider, 90° to 100°.
9. Rami of ischium and pubes further apart.
10. Coccyx more flexible.
11. Acetabula further apart.

Carus. (p. 10.)

"Axis of outlet" is straight line through the plane of outlet at right angles to it. Changes with change of position of coccyx. A line from promontory of the sacrum down to centre of plane of outlet.

Configuration of Pelvis in relation to Parturition.

Space in cavity of pelvis is preserved, as most ligts are attached outside.

Nearly all osseous projections are external, but spines of ischia are inside & facilitate turning the head.

Space is helped by curve of sacrum.

Pubic arch is wide & lower edges are everted outwards facilitating expulsion of head.

Coccyx is movable.

Female Organs of Generation.

1. External; concerned in copulation.
2. Internal; concerned in development of ovum.

External Organs.

1. Mons Veneris - cushion of adipose tissue over symphysis. Develops at puberty, & after puberty gets covered with hair. Presence or absence of hair helps in diagnosis. Hair may be long or short. In sterile women, hair is long & straight. Sebaceous follicles are numerous & help dilatation.
2. Labia Majora extend fr. ~~the~~ above downwards & back, getting thinner & forming elliptical cavity. Outer surface = skin, inner = mucous membrane. In stout women, they close

* Glans is composed of erectile tissue.

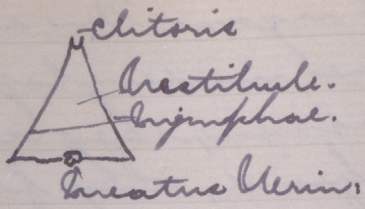
the orifice, protecting rest of organs. In child they are undeveloped in old women, they shrivel.

3. Behind, they form fourchette which bounds perineum anteriorly. Usually torn during 1st. labour.

4. Fossa navicularis is in front of this.

5. Labia minora or nymphae are under l. maj. Are 1½ in. long & form prepuce of clitoris.

6. Clitoris lies just behind ant. commissure of l. labia majora. Equal to corp. cavernosum of the penis. Is imperforate & has glans in front. Two muscles cause its erection. It is very sensitive & so it should be avoided in an examination. May lie higher up than usu-


clitoris
Vestibule.
hymenal.
Vulva
Uterus

mal. Imay be greatly elongated.

7. Vestibule is very important. It is triangular space, & is bounded above by the clitoris, below by meatus, & at sides by nymphae. It is very smooth & is the guide to the meatus urinaireous.

8. Meatus Urinareous is also very important. It opens at base of vestibule. Are 2 or 3 blind openings near it, & so you must be careful. Remember that the meatus is fibrous & circular, & so pressure makes it more distinct, while it obliterates the blind tubes. Never use female catheter because 1st. it is much too short & so can't be depended on. 2nd. it is too hard & firm, so doing damage. Use a gum-elastic

male catheter no. 8 or 10, but don't leave the stiletto in.

How to pass catheter.

1. Don't expose patient.
2. Raise patient's right leg.
3. Put finger in cleft & run it into the vestibule.
4. Find meatus, rinse the catheter with the right hand.
5. Push it in with left hand & cover outer end with the thumb.

Lecture 5.

9. Hymen.

Or membranous, concentric with home up. Edge sharp & well defined. May be circular, cribriform or imperforate. Usually ruptured on coition. May become stretched & cicatrized. May be found among prostitutes. Absence don't prove that

intercourse has taken place. Rupture of hymen leaves "carunculae myrtiformes". One finger may fail to detect it, but two usually do. On separating them very slightly, the edge is felt on the little lower finger, if present.

Vulvo-vaginal secreting apparatus consists of:-

1. Sudoriparous Glands near vulva.
2. Sebaceous Glands.
3. Muciparous, esp, near vestibule, near urethra, entrance to vagina.
4. Vulvo-vaginal Glands.

All these lubricate the parts in coition & parturition. Last two - size of kernel of apricot. Are in front of transv. perinei, are connected to vagina by ducts. Also called Bartho

linear or Cluvermayer's & correspond to Cowper's. Ducts open near fossa navicularis. Emit fluid during sexual intercourse, & probably, during parturition. Are very liable to inflammation & abscess formation, or obliteration of duct & formation of a retention cyst. With regard to these affections, you must interfere thoroughly by splitting gland open & filling cavity with wool soaked in iodine & tr.

Perineum.

Is space betw. fourchette & anus.

About 1½ in. long. During labour it elongates & distends to 4 times thei length, adding to the curve of Carus. Is thin anteriorly & thickens posteriorly.

Muscles closing pelvic outlet.

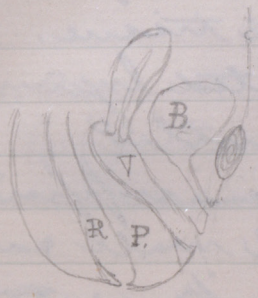
1. { Levatores Ani.
   { Coccygeus.

2. { Sphincter Ani.
   { " Vaginae.
   { Transversus Perinei.

Has median raphé & colora-
tion.
It is a triangular space with
apex upwards. Lies bet, back
curve of rectum & forward
curve of vagina. (See p. 26.)
Composed of areolar, fibrous,
& elastic tissue.
Supported by muscles closing
pelvic outlet.
Perineum supports the ant:
vaginal wall & all organs
above it, & creates curve in
vagina into top of which
uterine cervix is inserted.
It forms part of the pelvic
floor, & the main support
of the uterus.
Double curve of vagina helps
to keep the uterus in position.
Broad ligaments only sup-
port the uterus, when the
perineum is removed.

<u>Pathology of Perineum.</u>

As result of perineal tear


B.
V
R.
P.

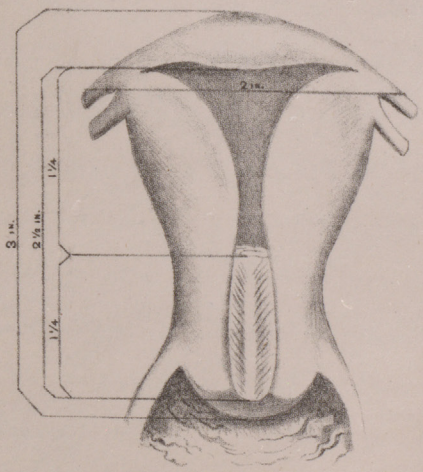
you may have
1. Prolapse.
2. Distension of vagina.
3. Septicaemia.
4. Displacements of pelvic organs.

10. Vagina.

Is vulvo-uterine canal. Is concerned in entry & passage of foetus.
Lies between the bladder & the rectum. It runs in axis of outlet & partly in plane of the brim, so that the canal is curved doubly, due to pelvic body.
Ant. & post. walls differ in length. Ant. wall is the shortest. Ant. wall is shorter by an inch. (2 & 3 in. respectively.) Uterus is inserted obliquely into anterior vaginal wall, thus shortening it. Post. wall follows curve of sacrum, & ∴ its length.

Upper end is roof or vault of vagina.
Post. fornix lies behind, & ant. fornix ~~is~~ in front of cervix.
Vaginal part is all roof, & narrowest at outlet.
Has 3 coats.
1. Muscular (Circular & fib. tiss.)
2. " (Longit. & unstriped)
Middle coat developes during pregnancy.
3. Inner. Mucous memb. has squamous epithelium & mucous glands. Has folds (transverse) disappearing after intercourse & labour.
Folds are to provide large surface for intercourse, & to enable canal to dilate during labour.
Squamous epithelial cells are deposited on any objects left in vagina & colour them white.

THE UTERUS.



11. Uterus.

Is formed by coalescence of uterine cornua.

Lies between rectum & bladder, broad ligts. & ovaries, coils of intestine & perineal body & vagina.

Retained in position by pelvic floor, curve of vagina, & solidity & firmness of perineal body. When these give way, broad ligts. support it.

Normal uterus inclines forwards. Its real position varies with the condition of bladder & rectum. It is incurved forwards normally, but is not bent at an angle. Curve is not altered by the conditions of bladder or rectum, but its position is.

Uterus is very moveable. Broad ligts. help uterus in centre of pelvis, but not

absolutely still or fixed, but it moves laterally. Moves also upwards & downwards with respiration, & is so moveable that the cervix can be pulled down to the opening of the vagina.

Chief movement of uterus is antero-posteriorly to accommodate the bladder & rectum.

All parts of uterus are not equally moveable, but the fundus & body above most movement, as they are not fixed like the cervix is.

Uterus is a firm, solid, hollow muscle. Has form of a small flattened pear.

Measurements (see fig.)

Half uterus is cervix & half body.

Normal uterus is 2½ inches long internally.

Adult virgin uterus varies in weight.

All uterus above insertion of Fallopian tubes = fundus.
All between this & cervix is body.
All cervix above vaginal wall is supra-vaginal, & all below the vaginal walls is infra-vaginal.
Are 2 ossa, viz: internal & external.
Uterus & cervix are not only regional divisions of the same organ, but, as regards their physiology & pathology, they differ entirely.
Fundus lies above F. tubes. Is dense & firm. Slightly convex in virginity; ~~con~~ vaulted & arched in pregnancy. After parturition, it remains somewhat vaulted. It may be examined bi-manually. Is least liable to malignant disease, while cervix is more liable to it. Simple tumours (fibroids)

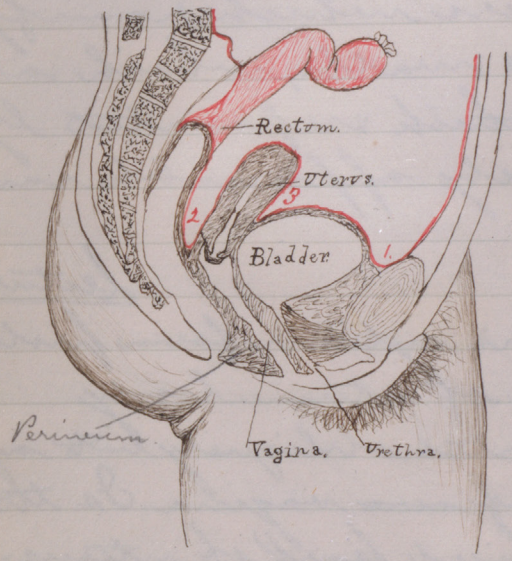
are ~~more~~ apt to develope here than in cervix.

Body is chief part of uterus. Chiefly expands to invest the ovum. Plentifully supplied by vessels from lateral borders which ramify in its walls, which are very thick & separated by a scarcely appreciable cavity.

Lecture 7.

Cervix is cylindriform prolongation of uterine body. Is inserted obliquely into ant. wall of ~~ova~~ vagina. Is the most fixed part of uterus, being encapsuled in cellular tissue.

At each end is an os. Internal os shuts off cervix from uterine body by ring-like band of muscular fibres. External os in virgin is round, smooth, even & cartilaginous.



To show peritoneum (—)

1 = Abdomino-vesical Pouch.

2. = Pouch of Douglas.

3. = Utero-Vesical Pouch.

In multiparous woman, it is split up into ant. & post. lip, rough, notched & mucous membr. may be everted.

Cavity of uterus is only potential. That of cervix is fusiform. Are best seen in vertical medial sections.

Composition of Uterus.

Are three coats

1. Outer or serous = Perimetrium.
2. Middle or muscular = Myometrium
3. Inner or mucous = Endometrium.

1. Perimetrium.

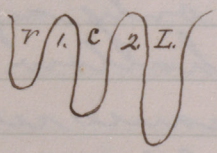
Peritoneum reflected fr. ant. abdominal wall ~~forward~~ backward onto the bladder, but when bladder is empty, it is reflected straight onto bladder. When bladder is full, it forms a pouch with abd. wall.

Between lower edge of the peritoneum & upper edge of pubes is space uncovered by peritoneum. Abdomino-

vesical pouch varies with state of the bladder. Fluids may gravitate into this pouch, but disappear when the bladder empties. Space uncovered with peritoneum enables operations to be performed here with less danger.

Peritoneum passes over the bladder, down post. wall (th), betw. bladder & uterus, over ant. uterine wall & fundus uteri.

Attachment to bladder is loose, that to uterus is intimate. Pouch betw. uterus & bladder extends to level of os internum. Retro-vesical ~~recto-vesical~~ pouch is only a potential one & is shallow. Pouch is shallow because cervix is attached to bladder by cellular tissue, which is firm, solid, & called "para-vesical



Pouch of Douglas.

1. & 2. = Utero-Sacral Ligaments.

cellular tissue". This latter makes malignant disease of the cervix spread forwards instead of any other way.

Peritoneum passes over fundus uteri & is firmly attached to it. Posty. attachment gets looser & looser. Passes down over post. ~~to~~ surf. of uterus & upper 1/3 of post. vaginal wall. It is then reflected to the ~~upper~~ ant. wall of rectum & from there to post. abd. wall.

<u>Pouch of Douglas</u> is the sac of peritoneum between uterus & vagina & ant. wall of rectum. It is an actual, & not a potential, pouch. Its depth is variable, it even covering whole of post. surface of the vagina ~~at~~ occasionally. Has three compartments, viz. central & two lateral, of which left is prob. deepest

part of peritoneum. Lateral ones are called "retro ovarian". In each lateral pouch, you can feel the ovary, in the central one, you may feel intestines when uterus is far forwards. Usually, you may find large masses of intestine in pouch of Douglas.

2. Myometrium.

Is composed of muscle & is largest part of the uterine wall. Fibres are non-striped & connected by connective tissue.

Arrainged in various ways, but direction of fibres can only be seen when hypertrophied.

Is an extrinsic layer, consisting of a thin meshwork, springing from one ~~round~~ ovarian ligament & running to the other.

Are 3 intrinsic layers.

1. External, running fr. cervix

Function of external layer is to expel the factus by shortening the uterus

up over fundus uteri like handle of a jug. Are prolonged into the round & ovarian lig's. & Fal: tube on each side.

2. Middle, is in transv: fascicuti intersecting each other, esp: at sides. These intersect around & close around the vessels. After parturition, they close the mouths of vessels & so check haemorrhage.

Lecture 8.

3. Inner, set of fibres are in rings. Are three sets; viz: one around each F: tube & one around the inner os. Assist in expelling the foetus.

3. Endometrium.

1. Of body. 2. Of cervix.

Mucous memb: of body enclosed ovum during pregnancy & nourishes foetus.

Must be looked at as

1. Mucous memb: pure & simple.

2. During menstruation.
3. " pregnancy.
Thickest mucous memb. in the whole body. Is thickest at centre & thins off as it approaches the internal os. Covers whole of int. surf. of uterus. Is of reddish tint, but this alters in relation to menstruation & pregnancy. Is closely attached to muscles underneath & has no sub-mucous cellular tissue.
Surface studded with little minute orifices = of uterine or utricular glands. These are peculiarly arranged. They run through entire thickness of mucous membrane. Are nearly parallel to one another, but are slightly tortuous. Bifurcate just before reaching muscular tissue.
These glands increase in size during menstruation &

pregnancy. Around these glands is a network of capillaries, which surround them in a lozenge shape. Near surface, capillaries run into venous radicles, from which comes the menstrual haemorrhage. Mucous memb. of uterus is smooth on surface & is covered by columnar ciliated epithelium. Kept lubricated by a slight secretion from the alone glands.

Constantly changes, being constantly thrown off & repaired.

<u>Mucous</u> <u>memb.</u> <u>of</u> <u>cervix</u> is of same extent as the body, as it is thrown into numerous folds. It is harder & paler than that of body. Contains many simple follicles. Some of these become closed at their mouth, & become distended, then being called

"Nabothian follicles", which can sometimes be seen in a split cervix. They secrete a sticky, transparent, fluid, which always forms a plug in cervix, except when washed away by uterine discharge at menstrual time, the uterus being separated from the external air.

Mucous memb. of cervix is thrown into numerous folds, arranged transversely. "A raphe" runs down the centre with the rugae on each side, forming the pennaiform rugae. Whole thing is called the "arbor vitae" & is characteristic of the cervix, although it is difficult to tell where they stop. In child, it goes up into the uterine cavity, but stops at inner os in the adult female.

Does not change constantly

OVARIES.

Number—Position—Connections.

Shape—Weight—Size—Conditions before Puberty, during Menstruation, during Pregnancy at Menopause—Their Structure.

Graafian Follicles—Ova.

Contents of Graafian Follicle from within outwards.

Germinal Spot
Germinal Vesicle
Yelk
Zona pellucida
} = Ovum.

Discus Proligerus.

Liquor folliculi. + Retonniculum of Batty.

Membrana Granulosa.

Tunica propria.

Tunica fibrosa.

OVULATION AND MENSTRUATION.

like that of the body, nor affects the ovum in any way. (Uterine ligaments etc. see lect.)

Ovaries.

Are analogues of testicles in males.

Are usually two, but occasionally there may only be one or none.

Placed in post. fold of the broad lig., behind F. tube & below pelvic brim.

Clinically, left ovary lies on rectum, when latter is in normal position.

Lecture 9.

This last accounts for left ovary being more readily felt than right, & on lower level than it, & more liable to hyperaemia & other minor affections. It also makes it difficult to make out ov. as it is surrounded by faeces

usually, but faeces ~~dead~~ indent & are not tender.
Right ovary is higher than left. Lies in relation to a coil of small intestine.
Ovaries are frequently moved from normal attachments. Normally, it gets dislocated in pregnancy, due to stretching of broad ligaments etc. After parturition, the ovary may remain high up, due to inflammation etc.
Ovaries may lie deep down in the divisions of pouch of Douglas, or get into the central one, due to gonorrhea etc. Displacement of left is commonest. One may pass to other side.
Ovary rarely gets into utero-vesical pouch.
When uterus is inverted, ovary may get into inverted part.

If you don't feel ovaries with fingers, you may be sure that ovaries are absent or perfectly normal.

Are irreg. & oval. Upper border convex & lower border is straight, vessels entering here. Int. surface is flat as compared with ext. surf. ~~Pl. Ov.~~ Before menstruation set in, they are smooth, white & polished. During menstruation, they increase in size & weight. During pregnancy, they double in size. As patient gets older, ovaries get scarred, due to escape of Gs. follicles. When old, ovaries shrivel up.

Ovaries partly covered by peritoneum. Under this is tunica albuginea, consisting of laminae of connt. tiss. fibres, interspersed with fusiform musc. fibres & is

white. Stroma is greyish-white tissue, composed of muscl. fibres, chiefly got from ovarian lig. & F. tube. Can be divided into medullary or vascular, & cortical or parenchymatous layers. Medullary layer is deeper & forms chief part of ovary, but contains no Gr. follicles. Cortical layer is outside the above & contains Gr. follicles, which are very numerous, eg. 700000 in both ovaries. Ganger & smaller ones are in immense nos. in cortical layers. Larger ones are deeper & less in no. Largest are nearest surface.

Puberty.

Includes all phenomena preceding & accompanying menstruation. Changes are external & internal.

External are
1. Elev. of throat & cheek.
2. Mammae are fuller & more sensitive.
3. Pubes covered with hair.
4. Figure becomes rounded.
5. Pelvis gradually enlarges.
Changes occur gradually, & in most girls ~~are~~ indefinite in time of appearance & duration.
Sexual appetites are very slowly developed. In many cases, they don't develope until after marriage.
Internal are
1. Ovaries enlarge & become scarred.
2. F. tubes straighten & fringes elongate.
3. Uterus has much developed, body enlarges & walls thicken.
4. Vagina gets more distensible.
5. Labia majora are more

definite.
At this period, neither prevent nor ~~encourage~~ encourage the discharge.

Infertility.

Never advise a woman not to marry, as she won't follow it.

Girls may become pregnant before menses appear, as ovulation occurs before they appear, but they don't possess the proper strength etc. to bear a child.

A woman should not marry before she stops to grow & should not do so until she is the twenties.

Lecture. 10.

Ovulation.

Function of ovary is to furnish female element of generation & expel it into F. tubes.

A Gr. follicle enlarges & moves towards surface of ovary,

producing hyperaemia of pelvic organs. Fimbriae grasp the ovary (Ovarian Hilabrali). Another theory is that ovarian fimbriae conduct ova into tubes. Rupture of follicle occurs & ovum gets into the tubes. Further changes depend upon impregnation. It is a constant process. Graaf's follicle takes 9 months to get to surface of ovary. ~~When gets to surface, there is a bleb over surf. of ovary.~~ Ovulation consists of 1. maturation & 2. discharge.

1. maturation. A Gr. follicle starts from ovagenic ~~g~~ layer, & gets to surf. of ovary in 9 months. It then starts afresh. Ovi-sac expands, pelvic nerves are irritated & ~~create~~ follicle becomes hyperaemic.

2. Discharge. Ovum escapes. Follicle becomes more vascular. Ovule gets larger by

exudation into it. This forms a mule on the wall & causes it with proligerous disc to escape.

(Formation of Corpus Luteum see end of Menstruation.)

Menstruation.

This means a monthly flow. Also called Menses, Catamenia & Menstrual Flow, meaning a bloody discharge from uterus once a month. Women describe it as "being unwell", "altering", "being freely", "having their courses", or "changing".

In human female, it occurs from uterus alone, but in cow & bitch, it occurs from vagina.

Symptoms are general & local, but some women are unaffected in health.

General symptoms are

1. Headache & general malaise

2. Fullness & weight of pelvic organs.
3. Faintness, languor & inability to perform usual work in a proper manner.
Uterus is soft & turgid. If there be difficulty in menstruation or obstruction to flow, you can feel uterus contracting (it always does so, during menses, but can't usually be felt). Uterus gets more erect. Cervix tissue is white, while mucous membrane is red & injected. Secretions from uterus are increased. Blood comes from mucous memb. of uterus limited by proximal end of F. tubes & os internum.
Reason for woman menstruating is really unknown. Present theory is, that it is secular. i.e. result of irritation of uterus due to over-

lation. If both ovaries are removed, women can't menstruate, according to some. Some (L. Tait) say that it is the tubes that cause it.

Changes in Uterus, Fallopian Tubes & Ovaries in Menstruation.

In ovary, is increased vascularity, at or about same time a Gr. follicle ruptures & ovum escapes.

In Fs. tube, fimbriae move around ovary, it gets congested.

In uterus, walls get more rigid. Just before flow commences, mucous mbrane, is puckered, folded, swollen, succulent & congested; orifices of follicles get evident to naked eye; it is deep red & injected; capillaries around glands become enlarged & more distinct. This turgefaction

affects its whole elements.
eg. epithelial cells on surf,
in openings of follicles pro-
liferate, interglandular con,
tiss. corpuscles increase in
no. & size. Hyperplasia ~~mucosa~~
reaches its height just before
flow, when cavity is obliti-
rated by thickening of the
walls. Just before the flow
sets in, the mucosa is in a
stage of acute catarrh.
Cellular elements near surf,
become seat of cloudy swel-
ling. Con. tiss. corpuscles
get swollen & cloudy. Epi-
thel. in follicles becomes
cloudy. Fatty degeneration
follows. Disintegrated ele-
ments give way. Capillary
walls break down. Follic-
lar walls give way & hae-
morrhage follows.

Lecture 11.

After this, you have uterine contraction. Blood is driven from the muscular wall to mucous tissue & thence externally. Ovum is thrown off bit by bit, being first thrown off near cervix & so on up to fundus in order. Fatty degeneration affects wall of vessels themselves, & so the whole thing is thrown off.

Sem. membrane can't be formed from sub-mucous tissue, as there is none. It is formed from the muscular tissue. Ovum, fibres produce fusiform cells; con. tissue cells produce rounded cells, & the bundles of round cells in con. tissue form the granular corpuscles. This corresponds to a partuition every month.

Repair takes from 7-10 days. Inoculation is a molecular

disintegration of mucous membr. followed by haemorrhage.

Are three periods in menstruation. viz. invasion, persistence & decline.

Period of invasion is short. It is pale red, bloody & accompanied by leucorrhoea.

Period of persistence, clear red blood appearing with very little tendency to coagulate.

In period of decline, discharge ~~blood~~ gets dark, truncid, less in quantity, clear, & lastly is only discharge of mucous & pus.

Menstruation occurs in this country between 14 & 15 yrs. of age. Varies with climate (2 yrs. earlier in warm & 2 later in cold climates). In Hindoos, it occurs at 12.

Occurs earlier amongst the rich than the poor.

are spurious discharges in some girls before actual discharge sets in.
"Menopause" is time when flow ceases. Also called climateric period, change of life etc. Occurs usually between 45 & 50, i.e. women menstruate for about 30 years. Women are usually free from pregnancy after this, but there may easily be exceptions. Some women cease about 40, others not till after 50, but there are exceptions. Women think they run more risk at this period than men do. All malignant disease usually shows itself (if present) at this period. Recurrence of flow, after it once stops is a bad sign.
It may go off suddenly, month by month, by

irregular periods, by extra large flow etc.
Women become irritable, have flushings, become depressed etc. May give way to temptations eg. drink, opium etc. Once over, all is right.
Discharge is normally suppressed ~~in~~ pregnancy, & while nursing child.
Change occurs in the uterus.
Vagina shortens & has parchment-like feeling. It is roughened by vaginitis (chronic)
Cervix shortens & becomes almost obliterated. Fornices disappear by absorption of fat etc. Uterus diminished in size. Cavity is smaller.
Uterus retroverted. Ovaries very small.
Recurrence of menstruation varies, but average time is 28 days.
"Type" is regularity of recur-

rence. Type must be kept in mind in gynecology, as it regulates duration of pregnancy as a rule. Any variation from a fixed type is morbid.

Average duration is 5-6 days.

26 %	menstruate	8	days.
21 "	"	3	" .
17 "	"	4	" .
12 "	"	5	" .

so all above 8 & below 2 is abnormal.

Lecture 12

Amount of discharge is from ʒiv-x. ought to be a gradual oozing. Amount may be roughly told by ~~amount~~ number of napkins used. Ask whether it comes in gushes or coagula, & if so it is abnormal. Colour varies according to the tissues. Odour is peculiar. Discharge is chiefly water,

blood corpus, albumen, extractives, fats, salts & mucous. Does not coagulate readily.
(N.B. An ovule usually enters F. tube at or near a menstrual epoch.)
Ebb period of ebb & flow. Ebb is when discharge is passing away. Flow is time when uterus is getting congested & is a determination of blood to pelvic organs. No operation should be performed just before or during menstruation. During pregnancy there is a determination of blood to the parts each month & so these times should be avoided in operations.

Corpus Luteum.

When follicle ruptures & ovule escapes, edges of ~~ovule~~ follicle get glued together. Follicle shrinks because of elasticity of

its int. coat & contraction of radiating muscle, fibres. As contraction takes place, the inner granular layer, cells of which are hypertrophied, get folded. Folds are bright yellow in colour & become adherent until they fill the whole cavity.

Are true & false c. lutea.

At end of 3 mths after rupture of follicle is no difference bet. two. Each is 3/4 in. in diameter, & contains a red clot & walls are becoming consolidated.

In menstrual c. luteum, at 4th mth, thickened memb. becomes fatty &, fr. formation of large no. of oil globules, becomes of bright yellow colour. Obliteration proceeds rapidly. It shrinks & atrophies. At end of next menstrual period, it is a

stellate fibrous cicatrix & in 2 months more it has disappeared.

In c. l. of pregnancy the changes are same, but more extensive & over longer period. It don't degenerate at 4th wks, but grows till 5th month occupying over 1/2 ovary. Begins to diminish at 6th. After delivery it soon atrophies. A month after delivery there is only trace & in 5 months is entirely gone.

Changes in Uterus consequent on Impregnation.

A. Structure.

Peritoneal coat is stretched, & at some places, thickened. Folds of broad lig. separate so that at end of pregnancy, Fallopian & ovaries are close to uterus.

Muscular changes (see before).
Mucous coat is prepared for ovum, when it passes into uterus. Changes are those of menstruation exaggerated. In 1st month, it is increased 10 fold in thickness. It is very vascular. Entire mem. is thrown into folds. Thickening is due to interglandular con. tissue. Uterine mucous mem. is soft, pulpy, succulent, due to increase in amorphous intercellular subst., which characterizes embryonic con. tissue. This is the true decidua or "decidua vera."
These folds & the thickened condition accounts chiefly for the retaining of the ovum at one part, usually near one F. tube. If walls are not folded, ovum passes down & is attached near internal

ve.

Placenta vera has outer & inner surfaces.

Outer surf; is in contact with uterus. Is rough & has irreg; projections. Largest of these is where the ovum first touched uterine wall. It looks villous. Are many enlarged uterine glands. Ends may be in small sac, & many may be in one eminence.

Inner surf; is smooth & glistening with furrows here & there = to the folds. Furrows mark off square or angular patches.

Changes in

1. Follicles. Increase in volume & no; Some are straight some wavy. Cell wall is grey & lined by granular epithelium. Often squeezed, semi-fluid milky colost;

comes out.

2. Proper cells of mucosa so multiply that at 3rd mth they predominate. ("decidual cells") Giant cells low down become fusiform & spindle-shaped.

3. Interglandular conn. tissue increases.

4. Vessels supplying decidua form glomerulus for nutr. of ovum; capillary tubes running parallel with glands and branches to form lozenge-shaped areas around orifices of tubes. Islands of Langhans are at junction of mucosa & muscular coats.

5. Epithelium of mucous memb. changes fr. cylindrical to pavement epithelium.

Lecture 13.

Decidua Reflexa.

When ovum comes into uterine cavity, it rests in a fold of mucous memb. This stimulates the decidua vera, which grows up around it ovum, becoming united at the "decidual umbilicus". As ovum grows, the d. r. & d. v. coalesce & form one membrane after 2½ or 3 months. Before this, there is space between the two, & a sound may be introduced here without producing abortion, as may also a pessary. Haemorrhage may take place during 1st 3 months of pregnancy without causing abortion by its coming from the free surfaces of these membranes. Space usually filled with clear mucus.

Implantation may take place from the lower pole of the uterus during the 1st 3 months of pregnancy.
Decidua doesn't appear as part of the ovum at pregnancy, as the decidua get very thin, & at full term, form a thin fibrillar membr. lying outside chorion.

Decidua Serotina.
This is the part of d. v. with which ovum first comes in contact, after its escape fr. F. tube, & forms the maternal part of placenta.
Decidua is thrown off at full term by fatty degeneration. Only upper epithel., & not glandular, layer which is thrown off at delivery.

B. Form of Impregnated Uterus.

20 % have uterus central.
4 " " " in left side.
3/6 " " " " right ".

Uninfregnated uterus is pyriform, but becomes round, as pregnancy advances up to 5th month, & at full term, it is ovoid, Ant. wall projects much more than the posterior one. On observing uterus through the abd. wall, it is seen to be ovoid, smooth & irregular, due to parts of foetus. Abdomen is moved by foetus within it.

C. Position of Uterus.

Uninfregnated uterus is a pelvic organ, as pregnancy advances, it becomes abdominal. Ant. wall lies in contact with the ant. abdominal wall. The uterus is not central but inclines to right side usually. In 100 women, 20 have uterus in centre, 4 in left side,

r & 6 in right side. Has been suggested that shortness of right ~~L~~ round lig. causes it; women lie on right side, etc. or an organized law. Also may suggest ~~its for~~ cause of position being the rectum occupying the left side, but none of above account for it.

When uterus rises ~~to one side~~ into the abdomen, it pushes the intestines up left & liver. They slip to left side & so incline uterus to right side (crown). Ant. surf. of uterus looks towards right side, i.e. ~~diameter~~ transverse axis of uterus lies in r. oblique diameter of the pelvis.

Growing uterus pathologically affects bladder

1. Causes dysuria. In 1st & 3rd causes frequent micturition

by preventing its expansion.
During next 6 months, uterus has no effect on bladder but at full term, & for 2 wks before labour sets in uterus descends, presses on blad, causes frequent micturition.
2. During pregnancy, bladder is pelvic, but during parturition, it is abdominal organ, being pressed up.
On rectum.
1. You usually get either constipation or diarrhoea or both alternating.
On nerves.
Neuralgia or paraplegia are caused by pressure.
On blood-vessels:-
1. Pressure, resulting in oedaema of legs, which is very common & purely mechanical. May be oedaema of hands & face, when it is very important, being due to some

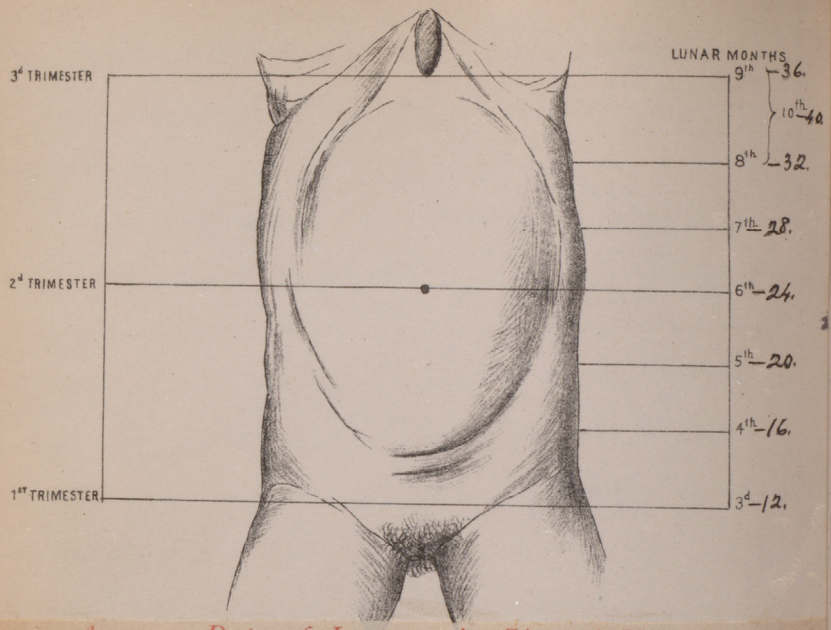
kidney disease & so favors liability to convulsions.
Varix may also result from this pressure. Occurs in 3 places, viz, lower leg, inner surf. of thigh, & vulva. It may occur without any swelling of legs. In pregnancy you often have pain in legs, thighs etc, due to varicosity of deeper veins, relieving the condition by bandaging legs.

On intestines.
1. Dyspepsia.
2. Jaundice.

As a rule, most women are healthier during pregnancy than at other times.

On diaphragm.
1. Asthma.
2. Palpitation.

On abdominal parieties.
1. Cracks.
2. Fissures.



Average Rate of Increase in Size of Uterine Tumour during Pregnancy.

In 15 weeks—Felt above Pubes.

„ 20 „ Midway between Pubes and Umbilicus.

„ 25 „ Immediately below Umbilicus.

„ 28 „ Advanced above Umbilicus.

„ 34 „ Midway between Umbilicus and Epigastrium.

„ 36 „ At Epigastrium.

„ 40 „ Slight descent.

Best way ~~is to~~ to describe rate of growth of uterus is to divide pregnancy into three trimesters. see diagram.

3 months - - - - brim.

6 " - - - - umbilicus.

9 " - - - - ~~half way~~ at epigastrium.

D. Change in Absolute Volume & Elimentation of Uterus.

Weight increases ~~24~~ fold, & length 5 fold. At full term is 12½ ins long. Gravid uterus weighs about 2 lbs; non-gravid uterus 1 z.

Increase in size of uterus is not caused by increase in size of ~~of~~ ~~uterus~~ alone but also ~~to~~ by hypertrophy eccentric ~~hypertrophy~~ of uterine walls. Space in uterus is partly filled up by growing ~~uterus~~ & partly by the ~~hy~~ hypertrophy of uterine walls.

In advanced pregnancy, it is the serum, which causes the chief increase of size of the uterus. In extra-uterine pregnancy, uterus increases in size, just as if child was in it.

Uterus is thickest at the placenta, at cervix it is thinnest. At full term, the mucous memb. doesn't contribute to size of uterine wall, wher. it consists of muscle tissue alone almost but, in early pregnancy, it helps to make up the wall.

E. In Cervix.

Cervix participates to some extent in hypertrophy of uterus, but stops abr. at 4 months, & is due, not to new formation or increase proper tissue, but to loosening of structure ~~separation~~ infiltration

of semen, due to hyperaemia of cervix resulting fr. passive relaxation & dilatation of the vessels.
Follicles secrete increased amount of clear mucous, which forms a plug, cutting off uterus from air.
Orifices of follicles become occluded & project in nodules ("nodules of Naboth.")
In some places of cervix, epithel. is pulled off. ~~at some place.~~
Limit of cervix is where rugae stop, i.e. os uteri internum.
Cervix gets soft. (Normal cervix is cartilaginous.) Hard cervix points to non-pregnancy & to disease. It also shortens. It pulls down from outside, while internally, it feels of normal length. Lower abt. uterine wall bulges, & so cervix

MODIFICATIONS OF THE CERVIX.

State of Cervix.	*Primigravidæ.*	*Plurigravidæ.*
a. Form of neck down to $8\frac{1}{2}$ months.	Fusiform.	Cylindrical or club-shaped.
b. Os externum down to $8\frac{1}{2}$ months.	Closed, regular, oval or rounded.	Gaping, irregular, jagged, and everted.
c. Canal down to $8\frac{1}{2}$ months.	Elongated spindle.	Thimble, funnel, or extinguisher shaped.
d. Os internum down to $8\frac{1}{2}$ months	Closed.	Usually closed, sometimes open.
e. External orifice at term.	Closed, and defined by thin lips tight and regular.	Open, and defined by thick lips, soft and irregular.

appears shorter, which is also assisted by os being high up & far back. Infiltration of para-vesical cellular tissue also causes cervix to seem shorter. Real shortening is disputed. Cervix does shorten, but only at end of pregnancy (Cream.) For 10 days or a fortnight before labour actually sets in, woman has aches & pains in pelvis, due to shortening of cervix. Cavity widens ~~too often~~ patulous, but chiefly in multiparous.

~~III~~ F. In Vagina.

1. Changes are less marked than in uterus & cervix.
2. Muscle fibres hypertrophy.
3. Vessels ~~&~~ multiply & become varicosed, giving it a port-wine colour. (Jacquemier's Test.) This is produced by interference of return of venous blood & so is not necessary

to pregnancy.

4. Mucous membr. hypertrophies & secretion increases. Secretion is creamy & around the cervix. Indicates increased determination of blood to the parts. As a rule, let this alone. Patient may complain of this being very offensive, esp. in early months of pregnancy, but smell will soon go off as pregnancy advances. You may use antiseptic wash.

5. Papillae swell & feel rough.

6. Mucous membr. increases in length, so that some folds bulge fr. ant. wall of the vulva.

G. On Vulva.

1. Shapes.
2. Becomes turgescent.
3. Veins enlarge.
4. Lets dusky hue.
5. Covered by abundant secre-

CONCEPTION AND GENERATION.

Male Element.—The Semen.

Female Element.—The Ovum.

Site of Impregnation.—Fallopian tube near ovarian end.

Changes in Ovum consequent on Impregnation.

1. Disappearance of germinal vesicle and spot.
2. Assumption of amœboid characters.
3. Segmentation into 2, 4, 6, 8.....divisions—Formation of Morula.
4. Formation of Blastodermic membrane by arrangement of cells under vitelline membrane.
5. Formation of area germinativa—Area pellucida—Primitive trace—Dorsal plates.
6. Separation of blastoderm into *external* and *internal* layers.
7. Formation of *middle* layer.
8. Splitting of middle layer, and union partly with *external*, partly with *internal* layers, and formation of the somato-pleure and splanchno-pleure.
9. Development of umbilical vesicle from deeper contents of ovum.

10. Closure of neural groove by dorsal plates.

11. Closure of alimentary canal by splanchno-pleure, and body cavity by somato-pleure.

Formation of Amnion by prolongation of somato-pleure backwards over embryo, converging folds meeting at "amniotic umbilicus."

Formation of False Amnion by continuation of folds of true amnion downwards towards umbilical vesicle.

Liquor Amnii.—Fluid contained between embryo and true amnion.

Formation of Allantois as a blind bud growing from lower part of alimentary canal, along umbilical duct into false amniotic space; unites false and true amnion.

Formation of Chorion.—Developed from vitelline membrane, which sends processes (villi) into decidua reflexa and serotina. These at first developed equally all over chorion, but those lying in decidua reflexa become absorbed; those in decidua serotina remain permanent.

They are of three varieties :—

1. Non-vascularised.
2. Simple vascularised.
3. Compound vascularised.

10. Closure of neural groove by dorsal plates.

11. Closure of alimentary canal by splanchno-pleure, and body cavity by somato-pleure.

Formation of Amnion by prolongation of somato-pleure backwards over embryo, converging folds meeting at "amniotic umbilicus."

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They are of three varieties:—

1. Non-vascularised.
2. Simple vascularised.
3. Compound vascularised.

tion.
In pelvis, there is a little mobility of symphysis pubis, sacro-iliac & coccygeal joints, due to softening of the cartilages.

Conception & Generation.

See Darwin.

Growth of Foetus.

See Slide.

Lecture 13.

Diagnosis of Pregnancy.

In practice you may be consulted by women
1. Who have no right to be pregnant.
2. Those who have a right to be but are not.
3. Who have a right to be, but should not be so.
When a woman comes to you to consult, your opinion is your patient's alone.

Duration of Pregnancy, 270 to 280 days. Time best divided into ten gestation months of four weeks each = nine calendar months and a week.

FŒTUS AT EACH MONTH.

1st Month.—

Ovum size of pigeon's egg.

Embryo ½ an inch, much curved, branchial arches, distinct tail, a trace of extremities.

2nd Month.—

Size of hen's egg, 1-2 inches long.

Weight 62 grains.

Permanent shape, eyes seen as black spots.

3rd Month.—

Size of goose egg.

Length 3-5 inches.

Weight about 100 grains, fingers and toes with nails distinct.

Great mass of chorionic villi atrophied.

Placenta formed.

4th Month.—

Length 6 inches.

Weight nearly 4-5 oz.

Sex distinctly recognised.

5th Month.—

Length 7-10 inches.

Weight 9 oz., lanugo over whole body.

6th Month.—

Length 11-13 inches.

Weight about 20 oz.

Skin wrinkled.

Fat begins to be deposited.

Head disproportionately large.

Sutures and fontanelles widely open.

If fœtus born, makes inspiratory efforts, moves limbs, and dies shortly.

7th Month.—

Length 15 inches.
Weight about 3 lbs.
Skin red, covered with vernix caseosa.
Eyelids separated, testicles in scrotum.
If born, cries, moves limbs, but even with care usually soon dies.

8th Month.—

Length 15-17 inches.
Weight over 4 lbs.
Skin red, fœtus thin, pupillary membrane disappeared.

9th Month.—

Length 17 inches.
Weight 5-6 lbs.
Body rounded, face lost wrinkles.

Mature Child.—

20 inches long.
6½ lbs. weight.
Skin white, vernix caseosa.
Hair on head usually dark.
Cartilage of ear and nose hard.
Nails project over finger-tips.
Umbilical cord inserted below middle of body.
Cranial bones hard.
If born, cries loudly, moves extremities freely, passes urine and meconium.

Roughly speaking, the length of fœtus in utero amounts to twice as many inches as its age in months.

e.g. 7th month—14 inches.
8th month—16 inches.

Physician may be certain of pregnancy, only have an opinion or have merely a suspicion. In latter case, give patient a "placebo" & tell her to return in one month. When woman with amenorrhoea comes to you, ask her if she has a cough, & then proceed to auscultate etc; the chest & look at nipples etc., & proceed accordingly.

"Signs" are tangible facts, while "symptoms" are the patient's opinions of his or her complaint. Uterine haemorrhage & vomiting are neither signs or symptoms.

Signs & symptoms are 1. Maternal & 2. Foetal.

1. Maternal.

Constitutional & sympathetic changes are always present, esp. marked in sensi-

TABLE OF THE SIGNS AND SYMPTOMS OF PREGNANCY.

Months .	1	2	3	4	5	6	7	8	9
Suppression of Menses .	×	×	×	×	×	×	×	×	×
Morning Sickness .		×	×	×	?	?	?	?	?
Mammary Areola .			×	×	×	×	×	×	×
Enlargement of Abdomen				×	×	×	×	×	×
Fœtal Movements .				×	×	×	×	×	×
Shortening of Cervix .			Ap	par	ent				×
Ballottement . .				×	×	×	×		
Uterine Souffle . .	?	×	×	×	×	×	×	×	×
Fœtal Heart . .				×	×	×	×	×	×
Dusky Hue of Vagina .		?	×	×	×	×	×	×	×

tive nausea.
Neuralgiae in head are frequent. Sleeplessness, dreams & "gloomy foreboding" are often observed. Latter comes on esp. in early stages & usually pass off later on. In head, you also have alterations of temper. Rarely pregnancy soothes nervous system. Some women are very easily affected by external objects.
In skin are many changes. Are streaks deposits of pigment eg "chloasma gravidarum" in face upper part of body. A dark line runs from pubes to umbilicus ("linea nigra"), which splits at the umbilicus. Any discolorations of skin become intensified. "Striae gravidarum" are supposed to be tears in reticulum malpighii or mucosum

of skin. Lainey says there is only disarrangement of the tissue due to stretching. Others say, they are due to difference in nutrition of the skin.
First theory is prob the right one. Are red striae & white striae ("linea albicantes") A red stria means that tear is recent & that blood was effused. White lines are cicatrices of red ones. They usually mean that a woman is or has been pregnant, but a woman with them may not have been pregnant, as striae may appear in women who are getting fat quickly or in rapidly growing tumours. Are usually below the umbilicus, & then are usually due to pregnancy.
In <u>digestive system</u>, the

appetite is depraved, stimulants must be kept from them. Women very fond of drink between pregnancies often stop taking them during pregnancy & vice versa. Ptyalism is usually present & may be very great (4 or 5 qts. a day) in pregnancy, cancer uteri, hysteria. Lessens as pregnancy advances after quickening. Morning sickness is often present. This is valuable symptom & may be a grave disease. Some become sick as soon as they conceive, but it usually occurs after first period of menstrual suppression. Lasts 1st three months usually, but may occur up to parturition.

Lecture 16.

Vomiting is not associated with feeling of bad health. Woman takes her food & then simply vomits it.

It may be

1. Nausea without vomiting, interfering with appetite or not.
2. Sickness & vomiting.
3. Vomiting without sickness.

Are 3 degrees. viz:

a. Patient feels well when she gets up. Eats her breakfast & then vomits it. Placebo only is indicated.

b. May be a distinct disease by vomiting every meal up.

Morning sickness comes on suddenly, lasts 3 months & then goes off suddenly usually.

c. May arise again after it has once passed off, then indicating twins or hydramnios.

Where it becomes a distinct

disease, patient gets pale, tongue furred & pulse weak. Here patient must be treated. There is no prescribed dietary, but humane patient in letting her take what she fancies. Plain bread & butter often is of service. Animal food & milk come next in value. Best medicine is oxalate of cerium or bismuth. Ant-acids are good, eg. potass or soda water. Laxatives are good

℞.

Tex: Cascarae Sagrada
~~Pulv.~~ Tert. Glycerrhizae Co: ~~aa~~ ℥ij.
Sig: ℥ss. at bed time. (Acts in 10 hours.)

Belladonna in small doses is often useful. When everything else fails, give a salt of morphia, & just as she is falling asleep, give a meal, which gets partly

digested. Patient may wake one morning & the sickness has disappeared.

c. It may become a dangerous & fatal disease by persistant vomiting. Patient won't die of starvation, ~~that~~ if you can feed her p. rectum. She dies of exhaustion during labour. If case is very bad & patient gets worse, you should consider abortion, but always consult a colleague first. If you are going to produce abortion, it must be done early. If possible wait until 7th month, as you may then save mother & child.

Causes of morning sickness have been disputed. It may be due to congestion of the cervix, to flexion (anto) the: Sickness may be stopped sometimes by introducing a finger into retroflexing cervix

slightly separate the membranes.
It is prob. due to stretching of uterine fibres.

Changes in blood.

1. No. of corpuscles diminishes towards end.
2. Fibrin is not increased until 6th month, but then increases until delivery & after delivery.
3. Is slight decrease of albumen.
4. Water increases in proportion, as pregnancy advances.

In urine.

Women have more water, less salts & urea than men have. It has been described that a deposit (Kiestine) is seen, consisting of triple phosphates, infusoria & fungi. This deposit is only seen on standing for 3 or 4 days.

Albuminuria causes it in men.

In blood-vessels.
Change in heart is the chief one. Heart becomes hypertrophied, esp. left ventricle, becoming 1/3 thicker than normal. Right ventricle & auricles preserve normal thickness. Precordial murmurs are heard, but are inconstant, changing day by day & becoming just before labour. Hypertrophy disappears after confinement.
This prob. explains immunity to death from chloroform in obstetric operations.
In mammae.
Mammae sympathetic in all uterine affections.
1. Uneasy sensations, throbbing, ~~sensation~~ tension, etc. but these may occur during menstruation.
2. Increase in size, (also after marriage, suppression of

menses etc)

3. Consistence becomes firmer & veins are enlarged, & distended, & distinct.

4. Striae may develope due to their increase in size.

5. Milk is formed, but this is not a certain sign.

6. Areolae develope. Around the adult nipple, the skin is darkened for ~~about~~ a circle of 3/4 inch radius. From the surface 12-20 small nodules are seen. From 3rd mth. onwards, this pigmentation becomes more pronounced & nodules become more marked.

None of these signs are important in multiparae.

Suppression of menses.

Lecture 17.

Menses are usually suppressed all through pregnancy, but

they may occur during part or rarely during whole of the time. Suppression may be due to phthisis, malig growth in abdomen or lactation. Menses may never have occurred.

State of Abdomen.

On inspection you may see

1. Pigmentation.
2. Striæ gravidarum.
3. Foetal movements.
4. When lying on side, the uterus projects left rectus in some women ("erectration")
5. Umbilicus is enlarged. Sunk back during 1st 3 months, due to heavy uterus pulling it back by washes. At 4th month resumes normal position, at its end depressions becomes filled. At 7th, it is flush & during last 2 months, it protrudes.
6. Increases in size & is flat in

~~the~~ early months. In 1st 3 or 4 ~~months~~ ~~the~~ abdomen enlarges in some women, due to gas in it.
Abdomen may grow out of all proportion to period of pregnancy, due to hydramnios ~~of~~ twins or myxoma of chorion (hydatids)
Rate of development of abd. varies, being influenced by height, breadth of pelvis etc.
Where pelvis is very small, abdomen projects greatly, ~~as~~ ~~also with the~~ each succeeding child, abd. becomes lax & protrudes more & more.

<u>State of Uterus.</u>

Occasional contractions (1-2 mins.) ~~& pal~~ palpations are felt, but also occur in soft fibroids.
Ant. vaginal wall is stretched & flattened, as is also ~~the~~ uterine body.
Cervix is soft & apparently short.

ABDOMINAL PALPATION.

Exact Scientific Manipulation.

Value and importance.

How to perform it.

Position of Patient.

Position of Hands.

Parts to look for—

Head.

Back.

Small Parts.

To determine—

1. Existence of Pregnancy.
2. Presentation of Fœtus.
3. Position of Fœtus.
4. Life of Fœtus.
5. Approximate Size of Fœtus.
6. Relation of Uterus.
7. To rectify a Mal-presentation.
8. To express Fœtus Head or Breech.
9. To aid in expulsion of Placenta.
10. To control Post-partum Hæmorrhage.

Abdominal Palpation.

Is scientific manipulation of the abdomen & not mere touching it.

Place patient flat on back with legs well drawn up to loosen abd. walls. Stand on right side & place palms of hands flat on abdomen. Have your side to woman's & put hands down behind pubes into pelvis to feel the head. This must be done slowly. Next place fingers in pelvis, when head may be felt between thumb & finger. Head may not be there. Next place hands flat on abdomen again & "paw" the abdomen to try & find the back, (a long smooth surface). You also may feel one or more limbs.

All cases of pregnancy may be so diagnosed without

Postal Movements are

1. Active.

2. Passive eg: Ballottement.

making a vaginal examination.

State of Vagina:

Is shortened in early months & uterus sinks into pelvis.

After 3rd month, it lengthens. Pulsation of uterine artery near cervix should be felt.

Cervix is high up & far back, may be difficult to reach. It may be felt by tilting up the pelvis. Vagina is very moist, rough from enlargement of papillae.

Veins become tortuous at lower end of vagina & project, having been mistaken for child's foot. (Kluge's sign)

This is caused by obstruction to return of venous blood.

2. Foetal.

Passive ones are those that you can make foetus perform i.e. ballottement. Are two forms of this.

*See lecture XIX for continuance.

One can be felt in mid term. Sit woman in edge of bed with feet on chair. Place fingers in vagina, & give ant. wall a push or prod. Foetal head recedes & then comes back, if finger is left still.

Another kind of b. is performed by placing fingers flat against ant. vaginal wall, when foetus may be felt moving gently against the fingers. If not felt, squeeze the abdominal wall. This is very useful in early pregnancy, it is almost infallible. Active are those that foetus makes of its own accord. *

Lecture 18.

Placenta.

Form.

This differs in different animals.

In man, it is discoidal,

convex on its outer surface concave on its inner. It is generally circular, but may be oval, reniform, caudate, or triangular, according to the arrangement of the vessels.

Dimensions & Weight.

These vary. The average size is 7 x 7 1/2 x 8 or 9 inches & 23 in: in circumference. It is thickest at its insertion & gets thinner as you approach the edge.

The placenta weighs from ℥ XV. - XX.

Site is usually the upper part of either the anterior (which is commonest) or post: wall, as the ovum is usually stopped here by the folds of mucous membrane. It may also be inserted into the fundus, middle zone or internal os.

Macroscopical Structure.

On making a section through the placenta from the inner surface to the outer are

1. Amnion, whose inner coat is composed of polygonal epithelial cells, & outer coat of fibrous tissue.
2. Chorion, composed of a fibrous & an epithelial or allantoidal layer.
3. Vascularised villous structure embedded in hypertrophied & vascular villi of the uterine mucous membrane, which is the true structure, as neither the amnion or chorion belong to the true placenta, but are merely attached to it.

The placenta has ~~#~~ foetal & maternal, or outer & inner surfaces.

On looking at the foetal

surface of the placenta, you see

1. Root of Funis.
2. Part of Amnion.
3. " " Chorion.
4. Umbilical Artery & Vein.

Amnion.

After leaving the funis, this covers the whole surface of the placenta, & then passes off to line the whole uterine cavity.

It is a smooth & glistening membrane, apposed to the placenta & so can be peeled off.

One third is placental, i.e. covers placenta.

It is covered by polygonal cells.

Chorion.

This is beneath the amnion.

It is not merely apposed to the placenta, but forms

UMBILICAL CORD.

ORIGIN.—The portion of allantois extending from fœtus to membranes.

COMPOSITION.—Amniotic sheath.
Two umbilical arteries.
Umbilical vein.
Pedicle of umbilical vesicle.
Remains of pedicle of allantois.

Later on, umbilical vesicle and allantois disappear.

At term—Composition of umbilical cord is—
Amniotic sheath.
Two arteries and vein.
Gelatin of Wharton.

FUNCTION.—Forms vascular connection between fœtus and placenta.

LENGTH.—5 or 6 inches to 5 or 6 feet, usually 20 inches.

ARRANGEMENT.—Both arteries and vein arranged in a spiral manner. Arteries coil round vein. Spiral from left to right.

Sometimes forms coils round child, *e.g.*, round neck, leg, or body.

Knots on cord caused by—

1. Length of cord.
2. Abundance of liquor amnii.
3. Movements of mother.
4. Exaggerated movement of fœtus.

an integral part of it, sustaining & transmitting the branches of the umbilical artery & vein.

Root of funis is composed of two umbilical arteries & one vein. When injected, the arteries are seen to run together spirally up the cord. At the placenta, the arteries separate, but are joined together by a transverse branch. Each vessel divides three times dichotomously, ~~three times~~ & then disappears in the substance of the placenta. They are the size of crow-quills. There are usually 16 spirals in the cord. Alterations in the shape of the placenta are due to changes in position of the vessels of the placenta. Place of insertion of the

cord varies. It may be
1. Eccentric. i.e. between the margin & centre (usual)
2. Central.
3. Marginal (Battledore Placenta)
4. Velamentous i.e. broken up & running some distance over the surface of the membranes, before entering the placenta.

As a result of the latter insertion, a piece of placenta may exist by itself, & remain in the uterus after the rest has come away, thus setting up haemorrhage.

If, in velamentous insertion, any vessels run across the internal os, they are ruptured with the membranes & the child bleeds to death before it is born.

<u>Surfaces.</u>
1. Maternal.
2. Foetal.

1. Maternal surface is rough & divided into cotyledons or lobules, being part of the decidua serotina. All over the surface, valve-like openings of vessels (veins) are seen, & a probe passed into them, takes an oblique direction. Minute arteries are scattered over this surf, & are the uterine arteries taking blood to the placenta.

The placenta is very thin, just where the amnion & chorion are reflected off. In this thin edge ~~are~~ is the circular sinus or "sinus of Krickel". This is not continuous, but stops every now & then. It is embedded in the substance of the placenta.

Microscopic Structure.

Foetal part is developed from the chorion & is vascularised by the allantois, consisting of chorionic villi.

villi of chorion frondosum are of three kinds: viz:—

1. Non-vascular, which dip into the decidua serotina & can't be removed without tearing.
2. Single-stemmed villi, which are vascular & dip into the nearest blood-pool.
3. Racimose villi, forming the chief part of the foetal part of the placenta. These form clumps, divide up etc.

A villus consists of a terminal afferent artery & efferent vein, surrounded by mucous tissue with epithelium around it.

The vessels are not inserted into the uterine glands, but into meshes of decidua serotina; these meshes forming the framework of the placenta.

The <u>maternal</u> part consists of large cavities, which contain

maternal blood, into which chorionic villi penetrate & dip. Decidua serotina is divided into uterine, trabecular & subchorionic layers. The uterine layer is again divided into a big-celled coat & small-celled coat, latter being next the uterine wall, & former next the placental wall. The small celled layer is left, when the placenta is shed. The trabecular layer forms large beams, ~~to support the~~ being the framework of the placenta.

When shed at full term, the placenta is chiefly fetal, but has a thin, leathery layer of decidua serotina on it.

A villus projects into ~~the~~ a maternal blood space, which is supplied & emptied by a uterine artery & vein.

Blood of the foetus comes into contact with the maternal blood by passing through walls of the villus. It gets carried off & fresh blood is absorbed by the villus from the maternal blood.

The cavern becomes filled with thrombi at birth ~~at full term, & probably these cause labour to begin.~~

A curling artery enters a lobule at its edge. It is twisted & serpentine in its course. Veins are large & straight. Towards the end of pregnancy small thrombi form & these probably set up ~~pregnancy~~ labour.

Function.

The placenta acts as a respiratory, circulatory, excretory etc. organ.

Lecture 18.

Peristaltic contraction of uterus is constant & may bend itself so as to represent a knee or elbow, or may tap against the abdominal wall.
If there is much ascitic fluid in pelvis, normal uterus may give ballottement.
A tumor within a tumor may give ballottement.
Active are called "quickening". i.e. the first sensation that the woman has of a living thing inside of her.
Occurs at 4½ month of pregnancy, as uterus then comes in contact with abdominal walls. Ivay be present before, but can't be conducted by pelvic walls. Ivay occur sooner or later. Women say that she has a jerk in abdomen, crawling feeling in the abdomen etc. She often

Certain Signs in later months.

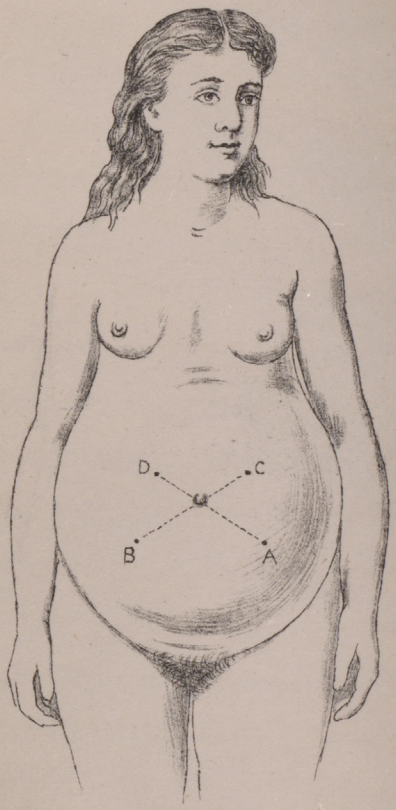
1. Foetal movements.
2. Foetal parts.
3. Obstetric auscultatory signs.

has to leave table etc, on account of it. It may be represented by gas in intestines or abd. contraction.
Fœtal movements may be felt by placing hands over abdomen. It may be feeling of rolling or gentle taps. It lies still at times, but they are always to be felt, if you wait long enough. Only can be represented by abd. contraction.
Parts of foetus can be felt.

Obstetric Auscultation.

1. Heart. (Fœtal)
Sound is a double pulse with reg. rhythm, not isochronous with mother's pulse. It is like a ticking of watch under a pillow. After once heard, it can always be heard by a man.
Rate varies from 120 - 140 beats per minute.
First is heard about 4 1/2 mth.

POINTS OF GREATEST INTENSITY OF FOETAL HEART SOUNDS



as uterus then comes in contact with the abdominal wall. Heard best where first part of child's thorax is nearest the abdominal wall. Is best heard on left side between umbilicus & illiac spine, as head usually presents first & back is to mother's left side.

From position of fœtal heart sound, you can learn a great deal. If heard below umbilicus, you have head presentation, & if in addition you have it on left side, the presentation is L. O. A. & vice versa. Sound is most intense at the one point. Intensity is influenced by various objects. Thickness of abd. walls, amount of liq. amnii, situation of fœtus, they become much clearer after liq. amnii

has escaped in labour.
Hearing foetal heart shows
1. A woman is pregnant.
2. Child is alive.
3. Presentation (head or breech)
4. Position of child.
5. Presence of one or more foetii.
6. Sex (approximately.)
7. State in labour.
Heart beats more rapidly in girls than boys, (144 – 124 respectively.) Rapidity of beats depends on size of child.. A large child has slower heart than a small one.
Auscultation may show how child is bearing labour, if they are getting weaker, hasten labour.
Non-hearing of sound may be due to change in position of child.
In auscultating, place woman on back, & look towards the feet.

are many fallacies.
1. Mother's pulse.
2. Air in intestines making a gurgling or crackling
3. One's own heart.
2. Uterine Souffle.
Placental souffle is misleading, as it may be heard after placenta is removed.
Is isochronous with the mother's pulse & can be heard at 4th month.
It is a musical blowing sound & pressure alters the note.
Becomes louder as pain comes on, stops when pain is at acme & then redeegins. Best heard at one side, but may be heard all over uterus. It is like a cardiac bruit.
It is caused by ovarian & uterine arteries.
You must differentiate

between this sounds in illiac vessels.

Lecture 28

Uterine souffle is also heard in large, soft, vascular uterine fibroids.
"Funic Souffle" is blowing murmur, synchronous with foetal heart sounds, is of no value. Where the cord is around the child's body & in apposition with abd. wall, it may be heard.
You may hear splashing of child in liq. amnii.
Gurgling of gas in intestines may be mistaken for heart sound.
Decomposition of foetus in utero may cause gas.
Placenta passing through the os may be heard by enthusiasts!!!
Certain signs in early preg-

PRIMIPARÆ.	PLURIPARÆ.
A. *Skin of Abdomen.* Firm, tense. Striæ red.	Soft, wrinkled, folds formed by hands if drawn over it. Striæ white.
B. *Abdominal Walls.* Difficult to compress. Difficult to feel the uterus through them. Difficult to feel fœtal parts.	Flaccid. Uterus can be felt. Fœtal parts easily felt.
C. *Breasts.* Firm, roundish, not pendulous.	Less firm, pendulous. Old cicatrices.
D. *Vulva.* Do not gape much, if at all.	Gape more or less. Bluish colour from varicose veins.
E. *Fourchette.* Intact.	Cicatrices from former ruptures.
F. *Hymen.* Recognisable. Distinct seams along base, torn here and there.	Warty prominence. Carunculæ myrtiformes.
G. *Thickening of Urethra.* Projects into vaginal outlet like bluish-red wrinkled ridge.	Smooth, devoid of wrinkles.
H. *Vagina.* Narrow, rough from folds of enlarged papillæ.	Spacious, soft, rarely swollen, papillæ felt.
I. *Vaginal Portion of Uterus.* Loose, soft, os closed.	Does not project as a conical wedge, only hangs as a soft flap.
K. *Os Uteri.* Circular.	Anterior and posterior lips distinguishable.
L. *When head Descends.* Anterior lip distended.	Internal os opens. Cervix like a funnel pointed end up.
M. *In last months, sometimes earlier.* Head in small pelvis, and pushes anterior vaginal vault down.	Head felt through os. Rarely descends into true pelvis, but remains movable at brim. Moves from right to left. Commencing pains fix it at inlet.

nancy eg: at 3rd: month.
1. If primipara, the areola is dark.
2. P. V. bi-manually, uterine body is felt soft & inclined forwards, corresponding in size to period of menstruation missed.
3. No tenderness of uterus
4. Woman healthy.
5. Previous menstruation was normal.
6. Keep fingers placed in the vagina against abut: uterine wall, you will feel tap of the fetus.

In later months, you have
1. Foetal heart.
2. " Movements.
3. " Parts.

How would you diagnose a pregnant woman at term?
What are signs & symptoms of pregnancy at 5th. month?
How will you diagnose preg: from fibroid, ovarian, phantom tumour or ascites?

TABLE TO INDICATE THE PERIOD OF GESTATION ATTAINED.

Month.	Body of uterus.	Changes of uterine neck.	Some functional changes.	Particular characters.
1st and 2nd	By double touch felt enlarged in anteversion, vaginal roof-stretching. Fundus felt on level of or above symphysis at end of 2nd month.	Softening of os tincæ; slightly open in pluriparæ. It is raised towards sacral hollow, or under promontory.	Breasts swelling; areola becoming darker.	Turgescence of vaginal-portion, of vagina and vulva (by speculum), and creamy secretion.
3rd and 4th	At end of 3rd month fundus is above level of symphysis; at end of 4th month it is half-way between pubes and umbilicus.	Softening of os more marked; more open in pluriparæ.	Swelling of breasts more marked; pigmentation more marked; erectility of the nipple.	Vascular turgescence more marked. Uterine souffle sometimes heard. Movements of uterus sometimes felt.
5th and 6th	Hypogastric prominence marked. Fundus at end of 5th month felt a finger's breadth below umbilicus; at end of 6th month a finger's breadth above, inclining to right.	At end of 6th month the lower part of vaginal-portion softened. Os in pluriparæ more open.	Œdema and varices sometimes appear. Breast-signs more marked; areola spotted; Montgomery's tubercles.	Palpation; movements of fœtus; ballottement. Uterine souffle, fœtal heart. Umbilicus nearly flat; brown line. In primiparæ head sometimes in pelvis.
9th month, 1st half	Fundus rises into epigastric region, and under edge of false ribs of right side.	The whole length of neck softened. In primiparæ os now slightly open.	Breast-signs still more marked.	Ballottement now rarely distinct, but head is *lifted up*.
2nd half	The fundus drops.	Os internum softens and opens a little in multiparæ.	——	Head more or less engaged in pelvis.

In fibroid you have haemorrhage, solid tumour, no objective signs of pregnancy.
In ovarian tumour, you have no objective signs of pregnancy.

Duration of Pregnancy.

Actual duration is 280 days, 40 weeks, 9 calendar months & a week or 10 lunar months, but women seldom run this time, 275 days being commoner duration.

Data for Calculation of Pregnancy.

Are exceptions to ~~every~~ rule for this.

1. Ascertained date of conception, eg: where only one intercourse has occurred, it is comparatively easy, but this is rare.
2. Sensations of female at time of conception.
3. Suppression of catamenia is the usual time to count

TABLE FOR CALCULATING THE PERIOD OF UTERO-GESTATION

Nine Calendar Months			Ten Lunar Months	
From	To	Days	To	Days
January 1	September 30	273	October 7	280
February 1	October 31	273	November 7	280
March 1	November 30	275	December 5	280
April 1	December 31	275	January 5	280
May 1	January 31	276	February 4	280
June 1	February 28	273	March 7	280
July 1	March 31	274	April 6	280
August 1	April 30	273	May 7	280
September 1	May 31	273	June 7	280
October 1	June 30	273	July 7	280
November 1	July 31	273	August 7	280
December 1	August 31	274	September 6	280

from. To calculate from this inquire when patient last menstruated. Count forward 275 days & parturition will occur in the middle of that week. Count back 3 months less a week from last day of menstruation, or else 9 months & a week ahead. Conception may occur just before the next period & then you may be put out 3 weeks, or a discharge may take place up to 3 months after pregnancy & then you are so many months out.

4. Quickening usually occurs in 16 wks., but may occur in 11 wks., be absent, protracted or present without pregnancy. Women calculate that they will be confined 4½ months after its occurrence.

5. State of cervix, but this in-

formation here is slight, except in last 10 days or so, when it shortens.

6. Size of child amounts to twice as many inches as the age in months is. i.e. if it is 14 in. long, the time is 7 months.

7. Abdominal palpation, noting rate of increase of abdominal tumour.

Viability.

"Viable" means child can have an independent existence. In France, a child of 180 days is non-viable legally.

Geo. III. & Sir Isaac Newton were 7th month foetuses.

Signs of Maturity.

1. Cries.
2. Has hair, nails & eyebrows.
3. " mouth, nostrils, eyes & ears open.
4. Cranial bones solid & well dev. limbs move readily.

Signs of Non-maturity.

PATHOLOGY OF PREGNANCY.

A Intercurrent Diseases.

1. Acute Infectious Diseases.

   a Variola.

   b Rubeola.

   c Scarlet Fever.

   d Typhus, Typhoid, Relapsing Fever.

2. Chronic Infectious Diseases.

   a Phthisis.

   b Syphilis.

3. Nervous Diseases.

   a Chorea.

   b Hysteria.

   c Epilepsy.

4. Cardiac Affection.

5. Disorders of Digestive System. Vide ante

B Displacement of Uterus.

   a Anteversion.

   b Retroversion.

C Diseases of Decidua.

D Diseases of Ovum.

E Abortion.

F Extra-uterine Pregnancy.

1. Cries feebly or not at all.
2. Bluish streaks on body.
3. Sleeps constantly.
4. Groans continuously.
5. Requires artificial heat to keep it alive.
6. Head covered with down.
7. Can't grasp nipple.

Lecture 21.

Pathology of Pregnancy.

Read up those subjects marked by a line in books.

Abortion.

All on list before this course it.

It is interrupted gestation.

Also called "miscarriage".

Every foetus born before sixth is abortion, after 6th. is a premature labour.

It is very destructive to foetal life, its consequences to the mother are disastrous.

Its frequency is very difficult

to ascertain, as it is often overlooked.

Occurs in higher classes from indolence, luxury etc.; in lower classes from accident usually.

Whitehead says multiparae are most prone to it.

Some say it is commonest with male female foetuses, though at term exceed girls by 14–16. More boys die during & after labour, so that women exceed men in number.

Occurs during 1st 3 months usually, seldom between 4th & 6th months. Occurs mainly at period corresponding to menstrual epoch. Occurs during 1st 3 months as the decidua are more vascular & softer than later. Haemorrhage is easily set up, & occurs between the decidua & uterine wall; between d. v. & d. r.; or into decidua. Clot

forms exactly as foreign body, setting up uterine contraction. Menstrual epoch is the usual time, due to the extra flow of blood to pelvic organs at that time.

Intercourse takes place during pregnancy, but should be avoided during 1st 3 months as it increases the congestion of the pelvic organs still more.

Age of fœtus in abortion should be distinguished.

All abortions before end of 2nd month are ova with membranes only; after that ova have placenta & cord.

Abortions are

1. Spontaneous.
2. Accidental.
3. Criminal.
4. Artificial.

1. Spontaneous is caused by paternal & maternal affection.

Women who miscarry with one husband go to full term with a second one often.

Ova impregnated by old men or boys have insufficient developmental power.

Women married to debauchees etc, miscarry.

Syphilis in the father is very apt to cause abortion.

Maternal causes are numerous eg,

A. Poisons in mother's blood, eg: fevers, syph, gases, lead, jaundice, & albuminuria.

B. Diseases degrading mother's blood. eg: anaemia, vomiting, over-suckling.

C. Disease obstructing circulation, eg, liver, heart & lung.

D. Causes acting on nervous system. eg. chorea, etc,

E. General conditions. eg: indolence, over sexual intercourse.

F. Local conditions

1. Of uterus, endometritis, displacements, fibroids, ~~endo~~ metritis, other tumours, carcinoma & adhesions.
2. Neighbouring organs, eg, bladder & rectum.

Foetal causes are
1. Anything involving death of foetus causes abortion. eg: knots on cord, twisting cord around body, fatty degen. of placenta, diseases of membranes or chorion (mapoma), anything cutting off nutritive supply to the foetus.

Period of death of foetus & abortion are not coincident.

May a woman have haemorrhage from uterus & not abort?

Erosions of cervix may bleed & don't affect foetus.

It may also occur before div. & ~~h~~ have coalesced.

May also occur in early

pregnancy so long as it comes from lower pole without affecting the foetus.

2. Accidental is caused by falls, blows or injuries, affecting mother's organs or the child directly, latter being rare. Slight accident may bring on abortion in some women, eg. slight fright or intercourse near menstrual epoch. Other women can scarcely be got to abort.

A doctor (female) should not attend a labour, if she is pregnant.

Prostitutes readily become pregnant, but abort readily also.

3. Criminal abortion is distinctly immoral, & should never even be ~~adm~~ considered. It is done by passing the sound into the uterus, & turning it all around the cavity, when abor-

tion will occur in 24 hours.

Lecture 22.

Risks of criminal & other artificial abortions are greater than those of spontaneous abortion.

Various medicines have been taken to procure abortion, eg. savin, or ergot.

Medicines are uncertain in action, endanger life of mother, & may kill mother without affecting the child.

4. Artificial is legitimate procuring of abortion. D N may be done in cases of obstinate vomiting, where there is an incarcerated gravid uterus, or when woman has general disease which is made worse by the pregnancy.

D N is performed by the sound.

How would you induce abor-

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tion? By introducing uterine sound & moving it freely about, when abortion will come on in 24 hours. A flexible instrument won't procure an abortion.

Symptoms of Abortion.

1. Premonitory are:-

a. Vomiting.

b. Rigors.

c. Feeling of discomfort

Pains & haemorrhage are the true symptoms of abortion. Haemorrhage usually comes first, & varies in amount. It may only be small quantity occurring daily for some time, or may be a large gush in one day. Elevation may be one or more days. Onset may be sudden or gradual. When ~~woman~~ has haemorrhage in early pregnancy, it shows separation of ovum from the uterine wall. This

is serious symptom but doesn't show abortion to be inevitable.
Pain is pelvic & intermittent. Pains mean that uterus is contracting on foetus & trying to expel it.
Is abortion threatened or inevitable?
It is inevitable, if foetus is dead, (but this can't be ascertained always); if haemorrhage is large in quantity; pain & haemorrhage are observed together; if pains are rythmical; but only certain sign is the opening of os uteri.
(If threatened, try & prevent it, but if inevitable, promote it.)
Another symptom is discharge of liq: amnii.
Diagnosis of abortion.
Means whether patient is pregnant or not.

If pregnant & there are pain & haemorrhage, abortion is diagnosed. It is only ~~Abortion is sure~~

1. If previously regular.
2. If uterus is enlarged.
3. If " " not painful.
4. " " " lying forward.
5. " " " soft.
6. " you have rational signs of pregnancy.
7. If pains continue notwithstanding haemorrhage.
8. If bleeding is profuse.
9. " pains are sharp.
10. " coagula pass.
11. " os is opened.

It is an error coming thro. os, if, it is true during pain, augments in volume with pain, passes directly thro. os into vagina without breaking, & if it feels like touching a bladder.

If it's returning menstruation only, haemorrhage

relieves pain.

Prognosis.

Abortion is mortal to fœtus. Dangers to mother are not immediate but remote. It is a great factor in diseases of women. Women seldom die immediately after abortion, i.e. are not liable to acute diseases immediately, where they are in parturition.

Immediate results are

1. Septicaemia. 4. Metritis.
2. Haemorrhage.
3. Convulsions.

Remote dangers are

1. Sub-involution.
2. Continuous haemorrhage.
3. Metritis.
4. Endo-metritis, all chronic ~~the~~ uterine or ovarian disease.

Abortion, occurring with an exanthematous disease, is more dangerous than an ordinary one.

always give serious prognosis.

Treatment.

Threatened abortion, eg. Pat, has slight haemorrhage fr. uterus x ~~at~~ 3 months in pregnancy. Haemorrhage lasted for 24 hours. Os is closed. Here you must avert abortion.

Advise absolute rest in bed, light diet (milk, soup etc.), temp. of room is to be kept low. Give an opiate & gentle aperient. In most cases give the opiate first, but, if long constipated, give aperient first. Liq. opii sedativus is best (25-drops), ~~or~~ morphia suppository, hypodermic of morphia, or chloradine may do or laudanum. Hypodermic is valuable.

Castor oil, Henry's sol (3ss) or cascara may do for the

aperient. Opiates necessitate larger dose of purgative than usual.
Don't plug vagina in threatened abortion, as it is apt to bring it on. Don't give styptics.
In an inevitable abortion, treatment is different. In an ordinary case, none is necessary. If bleeding is moderate & contractions are powerful, put patient in bed, give ergot & keep her quiet. Tell the people that if haemorrhage is profuse to send for you, & to keep all discharges from patient (blood, water, faeces etc.) for your inspection, so as to see if all is complete.
Procure complete removal of ovum as quickly as possible.
I. Ovum may be open & ovum separated but not expelled, woman

still bleeding. If uterus is free in cavity, carefully carbolize your hands & then dip them into carbolic sol. Pass the fingers up vagina, depressing fundus by hand on abdominal wall, & hook down the uterus.

Lecture 23.

If you press firmly on uterus, you can reach any part of it with the fingers in early months. If doubtful if you have taken it all away, anaesthetize patient, introduce two fingers into uterus or whole hand into vagina to enable you to reach higher up.

Never use abortion forceps, as you can't tell so well whether you have taken away the whole ovum or not, & may pull away part

of uterus

II. If os is dilated & ovum not separated, take a Higginson's syringe & pump hot water (120°) into post. fornix, thus setting up contraction & expelling ovum. If syringe is unavailable, plug the vagina, but be sure & do it properly. The plug is to act as foreign body stimulating uterus to contract, & also to hermetically seal the vagina to prevent haemorrhage. Use pledgets of lint with a string to each. Then give a good ʒ ij of liq. ergotae or hypodermic ~~act~~ injection of ergotin.

℞.

Ergotin ʒ ij.
Chloral Hydras ℥ j.
Aquam ad ʒ j.

Sig. Inject ~~XX~~ or ~~XXX~~ m.

Chloral hydrate prevents ergotin from decomposing.

On removing plug, ovum is found free in vagina.

III. If os is not dilated, take a tent & dilate. Only do this if haemorrhage is serious, but if not, leave patient alone as she may not abort. Use a tupelo tent preferably. Tent has 2 advantages, viz: it stops up os &: the haemorrhage is stopped, & it dilates the cervix.

If no tent is to be had, plug & wait.

After os dilates, proceed as before.

<u>After-treatment.</u>

Give small doses of ergot for 14 dys. Wash vagina with antiseptics, & keep woman in bed.

<u>Prophylaxis.</u>

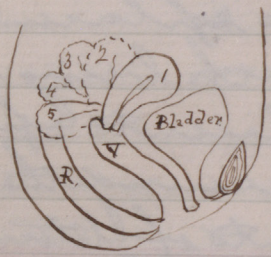
Some women usually abort, so you must find out & treat cause, eg. displacement, endo-

metritis, syphilis etc.
Many women persistently throw off foetus before it is viable. In most cases, the placenta is fattily degenerate. This may be prevented by tiding woman over the month. Make patient tell you as soon as she has become pregnant, & then give $KClO_3$ in large quantities, lessening the dose, if bad symptoms are observed.
In all women who abort, tell them to take great care of themselves at menstrual epoch.
If you arrive after an abortion has taken place, you must wait for some time to see whether all is away or not, as, if not, haemorr. will not stop.
An "incomplete" abortion, is one where whole ovum

is not thrown off.
If this has occurred, put patient to bed, use hot vaginal douche & give ergot.
If this does not do, curette.
A "missed abortion" is where woman threatens to abort but doesn't. She has pains & haemorrhage, but nothing happens until 3 or 4 months, when foetus & placenta may be born, both being shrivelled up & placenta ~~&c~~ is wrapped around the foetus.

Displacements of Uterus.

Anteversion of Gravid Uterus
More or less, this is normal, in early months. When very much ante-verted, it gives rise to incontinence of urine.
In later months, it is "pendulous belly" & may be very exaggerated, so that cervix may be higher than fundus. May be brought



1. Normal Uterus.

5. Complete Retroversion.

2. 3. 4. Partial "

about by splitting of rectus or laxity of abdominal walls. This interferes with labour by altering the axis of the uterus, & may be overcome by abdominal belt in pregnancy.

Where woman has pendulous belly in first pregnancy, it points to the brim of the pelvis being too small for the descent of the head.

Lecture 24.

Retroversion of Gravid Uterus.

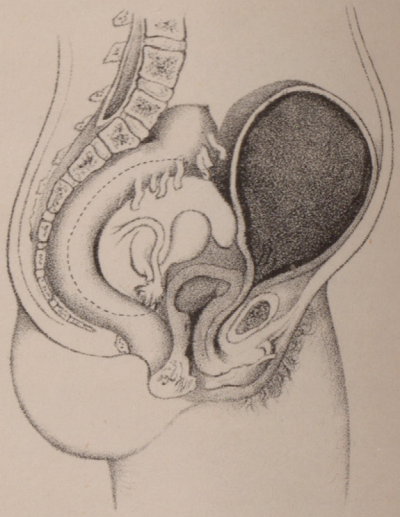
Here fundus is in hollow of sacrum & cervix is under the symphysis pubis.

It may be accidental or gradual, & in any degree.

Crosse says it has occurred 10 times out of 50 cases with him.

Causes.

1. Retention of urine is not



a cause, but some ~~say~~ that it is. The retroversion causes the retention. Distention of bladder lifts the uterus up with it.

Accumulation of faeces above uterus, is said to be a cause, but it is prob. only an aggravator.

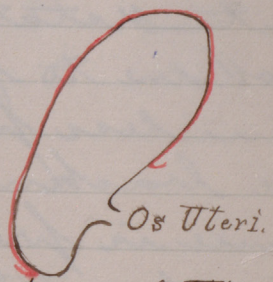
Deformity of pelvis may cause it, as where promontory is esp. projecting. Cron thinks this is merely a concomitant state.

It is not due to falls or blows, unless previously inclined backwards.

The cause is pregnancy in a previously retroverted uterus, but of course only a few in this position become pregnant.

Symptoms.

Under what circumstances do you meet with retention

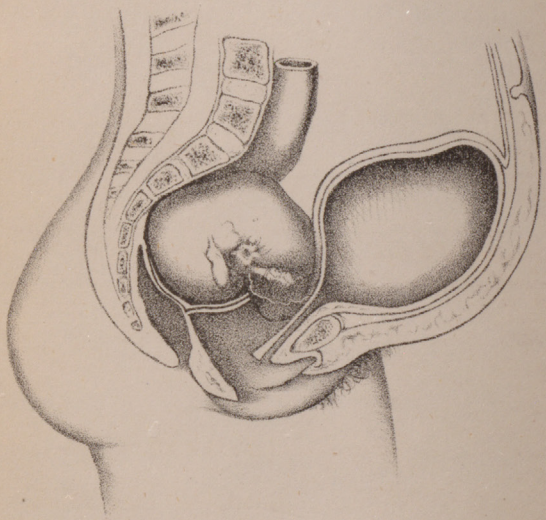


Sacculation of Uterus.
or
Retroversion of Gravid Uterus at Term.

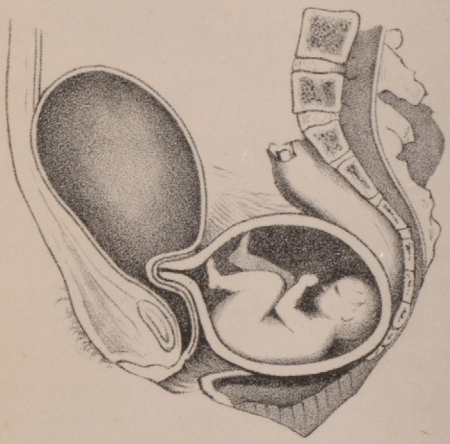
of urine in gravid woman?

[illegible] vaccination [illegible] uterine

Usual termination [illegible] re-



of urine in gravid woman?
It occurs in gravid retro-
version & is its chief symp-
tom. Patient complains of
frequent micturition, i.e. a
dribbling of water, contin-
uously, relieving the bladder.
A greatly distended bladder
may give rise to a uterine
souffle, & may be observed
here.
"Stillicidium" is constant
dribbling of urine.
Woman has tenesmus.
Perineum may be bulged.
~~Retention~~ ~~Retention~~ occurs between
3rd. & 4th. month usually, as
uterus then fills up whole
pelvis. Retroversion may
occur at term by one seg-
ment of uterus being remained
in pelvis & rest has grown
up into the abdomen. Also
called "sacculation of uterus".
Usual termination is re-

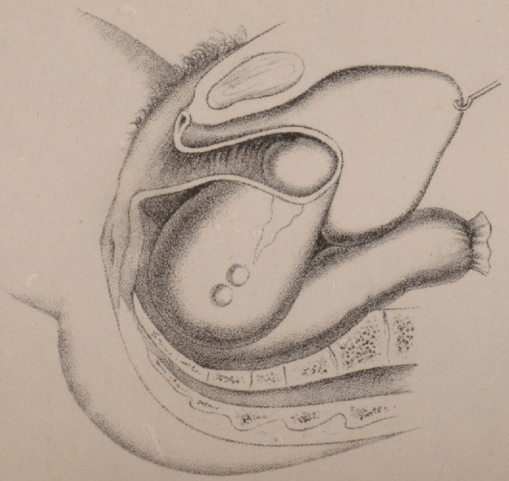


placement spontaneously, but it may have to be replaced. You may have abortion, incarceration, peritonitis, sloughing of bladder, mucous membr., sloughing of uterus, death by uraemia, or perforation of ~~bowel~~ vaginal wall.

Lecture 25.

Diagnosis.

Retention of urine will attract your notice first. Having drawn off the water, on p. v. exam. fundus will be felt in the hollow of sacrum & cervix up in ant. fornix. Next, see if ~~woman~~ is pregnant by the ordinary signs & symptoms of pregnancy. Women have retention of urine from some cause outside the urethra, here differing from a man's stricture. Catheterization ~~only~~ relieves the symptom



in woman & cause must be treated separately.

Treatment

Draw off urine first & then make a vaginal examination to find out the condition. Don't replace the uterus suddenly but wait for the result, which will be spontaneous replacement in most cases in about 12-24 hours, esp. if bladder & rectum are kept empty. If this does not take place, try manual replacement. Put two fingers in post. fornix, & push fundus upwards & forwards. Naturally, uterus rises on the right side, so this should be tried here. If this fails, withdraw fingers, but introduce them into rectum, pushing the uterus upwards & forwards along the right side. If this fails, introduce fingers of left

*A "gariel ball" is one with a tube attached. Push it into the rectum empty, & then fill it with air through the tube. Leave it there for some hours.

hand into rectum, pushing up fundus, & pulling down cervix with fingers of right hand in the vagina. If this fails, put patient into the genu-pectoral position, introduce fingers into the vagina & push again. If all these fail, chloroform patient & try again. On failure of these, you may introduce a "gariel ball"* into rectum & leave it for some time. This acts slowly. It is better to seize anti lip with volsellum & pull it down, pushing fundus up through the rectum. After replacing uterus, keep it in position by a Hodge pessary. Leave this in until uterus has become abdominal.

If uterus remains incarcerated, you may fail to empty

x Anteversion in early pregnancy is normal.

B. MOLES.

VARIETIES—

1. *False.*
2. *True Moles.*
   (*a.*) Carneous or Fleshy.
   (*b.*) Hydatid or Vesicular.—Hydatiginous ovum.

(α) 1. *False*—From Virgin uterus—clot—mucous membrane, &c.

2. *True*—

(β). (*a.*) *Carneous*—Effusion of blood round ovum—absorption of fœtus—expulsion of mass.

(γ). (*b.*) *Hydatids*—Abnormal development of chorionic villi—death of fœtus. (Does not occur independently of conception).

SYMPTOMS.—Obscure—mammary enlargement—sickness—cessation of menses—abnormal development of uterus—sensation of dead weight—sero-sanguineous discharge—passing of cysts.

TREATMENT.—Empty uterus — ergotin — tent or Barnes' bag—styptics.

bladder, when supra-pubic puncture may be tried. If it still remains incarcerated, you may ~~introduce~~ induce abortion by a sound.

Retroflexion is caused by continued retroversion. i.e. is its last stage.

Compare ante-version with retroversion of gravid uterus?

e) Retroversion occurs in early pregnancy & causes retention of urine etc. Anteversion occurs in late pregnancy & causes incontinence of urine.

Diseases of Decidua & Ovum.

Moles.

(a) False are fibrinous clots or bits of membranes, passing from non-pregnant uterus.

True are fleshy or hydatiginous

(8) Fleshy is result of pregnancy. Establishment of membranes is interfered with & development is arrested. Blood is early effused betw. membs. Foetus dies & is absorbed, or atrophies. All that is passed is thickened decidua with clots.

What is the difference betw. a missed abortion & fleshy mole?

Vesicular mole is also called "uterine hydatids"; "hydatiform degeneration of chorion"; "myxoma of chorion"; or "myxomatous degeneration of the chorion".

(9) Vesicular mole is perverted growth of villi, they growing all over decidua to an enormous size. They grow as large as currants or small grapes. Looks like white vesicles bunched in

red serum. Villi are translucent, contain clear fluid & are pediculated. Here, the fetus is usually absorbed, & so is not known in vast majority of the cases. It never occurs in the non-pregnant woman. Cause is mysterious.

Symptoms

Are not very pronounced, but symptoms of pregnancy are observed. Uterus grows out of proportion with the period of menstruation missed. Are irreg. haemorrhages. Only certain diagnosis is to see the "grapes" passed. Generally is a bloody & watery discharge.

Treatment.

General principal is to empty uterus as soon as possible. If os is closed, dilate it with Barnes' bag or tent. Chloroform the

PATHOLOGY OF PREGNANCY

CONTINUED.

EXTRA-UTERINE PREGNANCY.

Development of ovum outside uterine cavity.

Varieties :—

1. Tubal.
2. Abdominal.
3. Ovarian.
4. Interstitial.

All varieties rare. Tubal, perhaps, most common.

Tubal Pregnancy.

Causes.—Twisting, catarrh, stricture of tube. All forms of ectopic gestation dangerous. Tubal most dangerous of all.

Diagnosis and Termination.—Usually ends in rupture before end of fourth month, and death. Subjective Symptoms of Pregnancy—Tumour on one side in iliac region, occasional pain, uterus enlarged, p 130 often nothing suspected till rupture.

Premonitory symptoms of which are—

1. Colicky pains.
2. Uterine hæmorrhage.

And actual signs are—

1. Pain. (abdominal)
2. Collapse.
3. Hæmorrhage (internal)
4. Swelling of abdomen from collection of blood.

Result.

1. Death from collapse. or haemorrhage.
2. Peritonitis.
3. Encystment.
4. Abscess and discharge.

Treatment.

I. Before rupture.

Destroy ovum by

a. Aspiration of liquor amnii.

b. Injection of morphia.

c. Electricity.

II. After rupture.

1. Rest.
2. Opium.
3. Ice.

This gives a chance of re-encystment or abscess and discharge.

4. Laparotomy.

In abdominal variety, pregnancy may go on till full term, when, if diagnosed, laparotomy is indicated.

Other varieties to be studied specially.

patient. Put finger or hand into uterus & clear out clots & all. In a risk of haemorrhage, so inject ergotin (ergotin) to induce contraction. Also have carbolized water at 120° beside you to stimulate uterus to contract. after removal of hydatids, inject the water to prevent haemorrhage.

Lecture 26.

Extra-Uterine Pregnancy.

This means dev. of foetus outside uterine cavity.

Varieties are

1. Tubal.
2. Abdominal.
3. Ovarian.
4. Interstitial.

Tubal is commonest, & of various forms, eg. within tube, at proximal end & at distal end, depending on

situation of ovum in the tube.

It most commonly occurs where conception has occurred under exceptional circumstances, eg. where girl has been seduced & coitus takes place in awkward position.

Rarely occurs under 20 yrs of age.

Diagnosis.

The diagnosis of this before rupture is very difficult.

There is also irregular haemorrhage.

If central or at distal end, rupture into abdomen & bleeding to death take place, but if at proximal end, rupture into broad ligament takes place. In latter, bleeding into broad lig. takes place till pressure of the effusion stops the haemorrhage.

The cyst may only be slightly ruptured, when organization, inflammation & abscess result.

Calcareous degeneration may occur (lithopaedion) & give no further trouble.

Treatment.

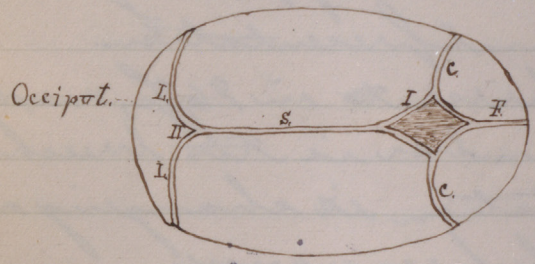
That recommended in slip for before rupture is not very good, but you should cut the tumour out, as, even if you are not sure, you can do no harm in cutting into the abdomen.

After rupture, you should do the same. i.e. cut, or, if you haven't courage to do that, advise rest, opium etc. & ~~go~~ send for surgeon.

"Attitude" of foetus is relation which limbs of foetus have to one another. Foetus has head on chest, arms folded

across chest, legs flexed & back bent forwards i.e. flexion.
"Presentation" is that part of foetus offering itself first at os uteri. Head usually is the presenting part, but this presentation is not assumed until the 7th. month & so the more premature the labour is the more apt are you to have malpresentation.
Head presents in 96%, & next in 1 number is the breech.
Presentation is changing all through pregnancy.
Some say that the presentation is due to contraction of ~~its~~ the uterus. Another theory is that it is due to gravity.
"Position" of foetus is relation of presenting part to pelvis, i.e. whether occiput is forward or backwards etc.,

Foetal Head.



S = Sagittal.

L. L. = Lamdboibal.

C. C. = Coronal.

F. = Frontal.

I = Anterior Fontanelle.

II = Post. "

Foetal head should be studied for four reasons. viz:
1. It passes 1st. through the pelvis.
2. It is not completely ossified.
3. Can be moulded (except the face & base) by overlapping of the bones.
4. You must recognise the parts of head in labour.

Sutures.
1. Coronal. (Frontale fr. parietale)
2. Frontal. (Frontale)
3. Lambdoidal (Par. fr. occipitale)
4. Sagittal. or Pointing. (Parietale)

Last is called sagittal from "sagitta", an arrow. Point of arrow is at back fontanelle, & base is at ant. fontanelle. ~~Do~~ ~~not~~

Lecture 27.

Fontanelles.
Are two. viz:
1. Anterior.
2. Posterior.

INDIVIDUAL PHENOMENA OF EACH STAGE.

Page 139.

FIRST STAGE.....
1. Prodromata.
2. Uterine contractions.
3. Gradual opening of os uteri.
4. Formation of bag of membranes.
5. Rupture of bag of membranes.
6. Full dilatation of os uteri.

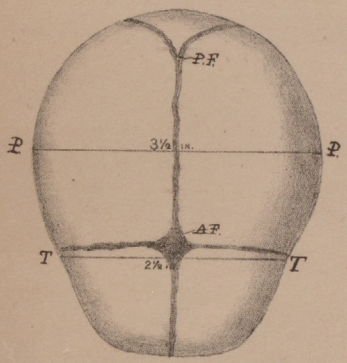
SECOND STAGE...
7. Descent of head into pelvis.
8. Formation of perineal tumour.
9. Full dilatation of external parts.
10. Expulsion of head and body of child.

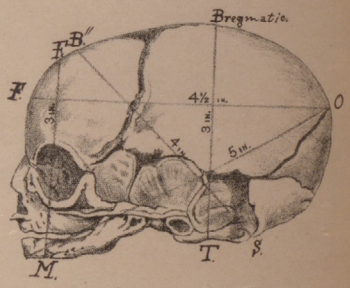
THIRD STAGE.....
11. Detachment of placenta.
12. Expulsion of placenta and membranes.

1. Anterior fontanelle is that opening in fœtal head betw parietal & frontal bones. It is a distinct membranous interval. Has sagittal, coronal & frontal sutures running ~~to~~ into it, & so it has 4 sides, being lozenge-shaped. May be recognized by shape, size & 4 sutures running into it. It is caused by ossification beginning in centre & running to the margins of the bones. It takes about a year to close.

2. Posterior fontanelle is only a fontanelle in name, as there is no opening. It is triangular, being made up by lambdoidal & end of sagittal sutures. It is the one to be felt in labour, as pressure on it makes it a fontanelle, ~~as~~ the scalp will com

THE FOETAL SKULL.





P.P. Bi-parietal. = 3½ in.
T.T. = Bi-temporal. = 2½ in.
A.F. = Ant: Fontanelle.
P.F. = Post: "

O.F. = Occipito-frontal.
O.M. = " -mental.
S.B'' = Sub " -bregmatic
F.M. = Fronto-mental.
T.B. Trachaelo-bregmatic.

N.B. Length of the sub-occipito-bregmatic depends on what part of bregma it is measured at.

be pressed under the parietal bones. It is no membranous interval in it. It is recognized by triangular shape, three sutures running into it, no membranous interval to be felt & because occiput can be depressed.

Diameters.

1. Occipito-frontal runs from forehead to occipital protuberance. It is 4½ inches long. Seldom fits into diameters of the pelvis.

2. Sub-occipito bregmatic runs from middle of anterior fontanelle to the point on ~~back~~ occipital bone below occipital protuberance & foramen magnum. This is the diameter which nearly always passes through the pelvis. Its size depends on the extent of flexion. It may be 4 or 3½ inches.

3. Bi-parietal is from one parietal protuberance to the other.

Moulding

1. Bi-parietal.
2. Occipital.
3. Frontal.
4. Caput succedaneum.

DN is 3½ inches, but may be lessened to 3 in. by pressure.

4. Fronto-mental runs from frontal eminence to point of chin. Length = 3 in.

5. Occipito-mental is the largest DN runs from occipital protuberance to point of chin. 5 in.

6. Bi-temporal is 2½ in: DN runs between the 2 temporal prominences.

"Vertex" is the whole length of sagittal suture & all bet. the 2 parietal protuberances.

Moulding of Foetal Head.

DN is also called "equitation".

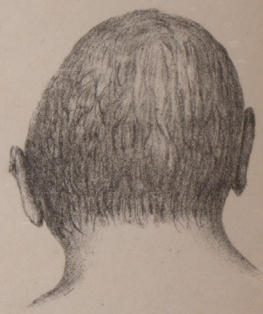
Head, not born but taken out by Cæsarean section, is rounded.

Head is wedge-shaped ~~after~~

As head passes thro. pelvis in ordinary labour, you have bi-parietal overlapping (the parietal bone that is posterior is under the anterior one, as the part. are pressed against

HEAD MOULDING
I

NORMAL LABOUR. L.O.A



THE SAME.
SHEWING ASYMMETRY.
"Shearing"

HEAD MOULDING
II

CAESARIAN SECTION
(HEAD UNAFFECTED BY LABOUR)

BREECH

the sacrum, while ant. one is free). About a 1/2 inch may be thus gained. What shape of head is caused by this? A "shear" is formed on the head, i.e. post. side is flat, while other part is rounded. Occipital bone also is depressed below the parietal ones, so that the latter overlap it. Parietal bones overlap the frontals, as the former are least pressed on.

In normal labour, the long diameter of head is elongated, i.e. every child born normally should have sugar-loaf head.

"Caput succedaneum" is another part of moulding.

Face can't be moulded as the bones are too firmly united & well ossified.

Lecture 28.

FACTORS OF LABOUR.

I. POWERS OF PARTURITION :—

(*a.*) Uterine Contractions—Primary.

(*b.*) Thoracic and Abdominal Muscles—Secondary.

II. PASSAGES OF PARTURITION :—

(*a.*) *Soft.*—Lower segment of Uterus—Cervix Uteri —Vagina—Vulva.

(*b.*) *Hard.*—The Pelvis.

III. PRODUCTS OF PARTURITION :—

Liquor Amnii—Fœtus—Secundines.

Factors of Labour.

Parturition.

Is problem in dynamics in wh. 3 factors are concerned. When all work together uniformly the labour is normal, but when one or more is interfered with, it is abnormal.

Factors of Labour.

1. Powers.
2. Passages
3. Passenger.

} See Slip.

Passenger is the lig, amni, foetus & secundines.

Stages.

Are 3.

1. Stage of Dilatation.
2. " " Expulsion.
3. " " Delivery.

} See Slip. p. 137.

Classification of Labours.

1. Natural = Eutocia.
2. Unnatural = Dystocia.
   A. Laborious.
      α. Lingering.
      β. Instrumental

NATURAL LABOUR—EUTOCIA.

DEFINITION.

Three Stages of Labour—

I. From Commencement of Labour to the Complete Dilatation of Os uteri.

Stage of Preparation and Dilatation.

II. From Complete Dilatation of the Os uteri to the Birth of the Child.

Stage of Expulsion.

III. The Separation and Expulsion of Placenta.

Stage of Delivery.

B. Preternatural - some other part than head presents.
C. Complex, where you have convulsions, twins etc.

Causes etc. of labour are unknown really, but the thrombosis in placental vessels may affect it in some way. One theory is fatty degeneration of placenta membranes.

Natural Labour.

Also called "eutocia."

A "normal labour" is one in which head presents, is uncomplicated over in 24 hours.

Phenomena of Labour.

1. Prodromata are usually present, but may be absent or slight. Depend upon preparatory changes in passages & descent of uterus.

You have increased moisture of vagina ("show"), consisting of mucous tinged with blood.

FACTORS OR ELEMENTS CONCERNED IN EACH OF THE THREE STAGES OF LABOUR.

I. STAGE OF DILATATION :—

1. *Power at Work.*—Uterus.
2. *Passages.*—Lower segment of Uterus and Cervix.
3. *Products.*—Liquor Amnii and Membranes.

II. STAGE OF EXPULSION FROM CAVITY :—

1. *Powers.*—Uterus and Accessory Muscles combined.
2. *Passages.*—Cervix, Vagina, and Vulva, surrounded by the hard Pelvis.
3. *Product.*—Fœtus.

III. STAGE OF EVACUATION OR DELIVERY :—

1. *Powers.*—First the Uterus, then the Accessory Muscles.
2. *Passages.*—Uterus—Cervix—Vagina.
3. *Products.*—Cord—Placenta—Membranes.

The income is the increased secretion of vagina, & blood may come from rupture of some minute vessel of cervix or decidua.

Uterine tumors subside just before labor begins, as a result of this, you have free respiration, bowels & bladder are pressed on so she has diarrhoea & frequent micturition, woman walks with greater difficulty.

Cervix shortens about ten days before labor sets in & helps to tell probable date of confinement.

2. Uterine contractions are not exactly same as pain, as one may occur without the other. Contractions only cause pains ~~become severe~~ when severe.

Pains are (1) false (2) true. False pains occur frequently. May be partially con-

	True	False.
Date.	At term.	Before full term.
Cause.	No assignable cause.	Local or general causes.
Character	Regular.	Irregular.
Effects.	Dilate cervix.	None.

CLASSIFICATION OF LABOURS.

I. Natural = Eutocia.

II. Unnatural = Dystocia.

Order 1. Laborious.

(a) Lingering.

(b) Instrumental.

Order 2. Preternatural.

Order 3. Complex.

CLASSIFICATION OF LABOURS.

I. Natural = Eutocia.

II. Unnatural = Dystocia.

Order 1. Laborious.

(*a*) Lingering.

(*b*) Instrumental.

Order 2. Preternatural.

Order 3. Complex.

tractions of uterus. They must be recognized. A false pain doesn't dilate cervix or child's head, i.e. is no pressure against the cervix. The false pains usually occur a week, fortnight or month before delivery. Are usually caused by something disturbing the patient's condition. Pelvic veins are valveless & congested, so anything causing increased congestion causes irritation & so pains come on. Other causes are indigestion, constipation, dysuria etc.

Treatment of false pains is to remove the cause. Put the patient to bed & elevate the pelvis to relieve its congestion. Give a purgative, & suspend contractions ~~of~~ by opiate.

True pains vary with the

Dolores Precagientes
" Preparantes.
" Expultrices.
" Conquassantes.

Lecture 29.

stages of labour. At first there is little pain, but abdomen is harder than usual. When actual dilatation of os comes on, a cutting or grinding sensation comes on rapidly, this meaning that cervix is being dilated & stretched. The dolores preparantes pass from back of tumour forward, & give rise to utterances of discomfort, as patient thinks they do no good. Dolores expultrices are during the expulsion of head, & the d. conquassantes during birth of head.

In 1st stage, pains & contractions alone occur, but in 2nd stage you have efforts in addition. When head is passing the os & vulva, pains are cutting. In vast majority of cases, there is pain. In black people, there is little pain, due to small size of the head. Civilization

increases the diffimlty of labor due to the head getting larger.
It has been said that the pains were caused by pressure on the nerves of pelvis, but they are probably due to the uterine contractions pressing on uterine nerves.
Pains & contractions are intermittent, but are rendered continuous by ergot, which is dangerous to mother & child for that reason.
In 1st. stage, only uterine muscles are engaged.
During a pain, patient takes deep breath, closes glottis, diaphragm contracts & so abdominal cavity is diminished. As a result, you have congestion in pelvis, flushed face & increased vaginal secretion.
Pains cause
1. Increased arterial pressure.

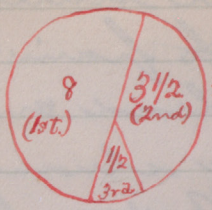
2. Rise in pulse-rate.
3 Increased secretion of urine.
4. Rise in temperature.
5. Slackening of respiration.
As labor advances, pains increase in length, strength & frequency.
Advantages of intermit: pains are
1. Rest to mother.
2. Relief of pressure on mother.
3. " " " " child,
4. " " " " placenta,
allowing child to breath.
3. Gradual Opening of Os.
Os is high up & far back.
Ordinary cervix ought to be coal, secreting copiously, thick mucus.
Beginning of dilatation is slow. After it reaches size of florin, it dilates rapidly. As cervix dilates, it often tears, esp: in left side.

a dry rigid cervix is always morbid.
During 1st stage, patient often has rigors & vomiting, or is hot & perspiring. These are favourable.
Cries in 1st stage are murmurs.
When cervix dilated to some extent, you feel bag of membranes protruding, thus acting like a wedge & protects head from pressure. Water accumulates in front of head & forms the "fore-waters". During a pain the bag protrudes & hides head from being felt, so examine before & during pain. Bag may protrude down to vulva. When it projects like sausage, the presentation is not a head one usually.
Rupture of bag of memb-

rares occur during the height of the pain. Early rupture is bad & may be caused by clumsy examinations. Betw. chorion & amnion, you may have fluid, which misles out on rupture of chorion, & so mislead you. In cases of hydr~~o~~orrhoea gravidarum i.e. transudation of fluid fr. amniotic sac, or else secretion of fluid by the decidual wall, you may also have rush of fluid. Membr's may be very tough & don't rupture, so child may be born with the membranes around it.

Birth of entire ovum is where fœtus, liq. amnii, membranes etc. are born all true.

"Caul" is the amnion & chorion around child's face, & children so born are supposed



= 12 Hours.

to be very fortunate.
Stages vary, but relative length is represented in diag.
1st. stage is protracted & safe.
2nd. stage is painful & dangerous.
Length of labour varies & or can't be foretold. Say it depends upon the woman herself.
A woman is always safe so long as membranes are unruptured, & 1st. stage practically ends with rupture of the membranes. Danger of woman increases every hour while in 2nd. stage.

<u>2nd. Stage.</u>

Pains are expulsive. Head passes through cervix to ~~perineum~~. Vagina begins to dilate. A storm of uterine contractions is set up.
Pressure on cervix set exer-

ted & soft, life disappears. "Caput Succedaneum" is now formed. A study, tumour forms on the child's head, formed by exudation of serum into the ~~fatty~~ cellular tissue of scalp. Forms on part of head not subjected to pressure. It disappears soon after the birth of the child. One forms in 1st stage, one in 2nd stage & one at end of the 2nd stage. 1st & 2nd are on parietal bones & last is on occipital bone. The longer labour lasts, the ~~longer~~ bigger is the caput. Sometimes another tumour forms on child's head, viz. a "cephal-haematoma", & differs entirely from the caput, being an effusion of blood between pericranium & the bone. A cephal-: has a solid edge, caput is much

Lecture 30.

that its edge not marked.
Cephal. is confined to one bone
takes weeks to be absorbed
or needs surgical interfer-
ence. May occupy site of
the caput.
Perineum gets greatly distend-
ed & may tear. Fourchette al-
ways tears.
<u>3rd. stage.</u> Placenta seldom is
born spontaneously. Should be
born within 1/4 or 1/2 hr. after
the child, as the os closes
again & whole process has
to be gone over anew. It
begins to be separated usually
at close of 2nd. stage, & 3rd.
stage is merely its expulsion.
Are two methods of expulsion
of placenta. ~~Either~~ If left
alone, it is born folded on
itself, the uterine or detached
surf. gliding along inner
surf. of uterus. If you pull
it out, it comes like inverted

Denominators
- Occiput in cranial.
- Chin " face.
- Acromion in shoulder.
- Sacrum " breech.

umbrella, & if squeezed out it comes out in an indefinite form. This stage involves patient in danger. As soon as child is born, you ought to have continuous uterine contractions to expel the placenta. After its expulsion, uterus continues to contract & feels like a cricket ball.

Mechanism of Labour.

Cranial Positions.

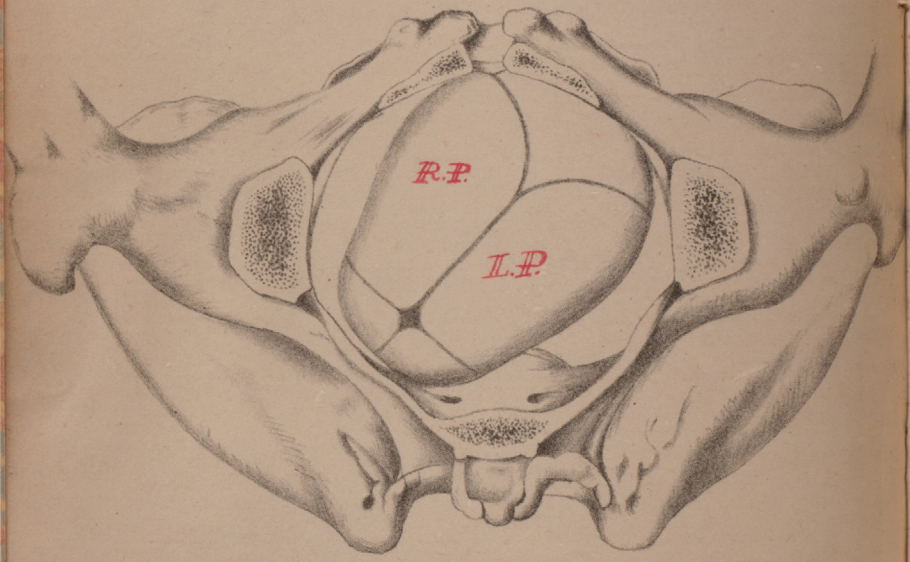
"Presentation" is that part which offers first at os uteri, & every one has an ant. & post. position. All in front of transverse diameter is ant., & all behind it is posterior.

Every position & presentation has its "denominator", i.e. that part from which the ~~presentation~~ position has its name.

Cranial are two: viz, ~~Vertex~~

VERTEX PRESENTATIONS.

I



LEFT OCCIPITO-ANTERIOR – L.O.A.

First of Naegele. First in frequency.

1. Occipito-ant. (R. & L.)
2. " -post. (" " ").
* Occiput fits to R. for. ovale.
Sinciput " " R. sacro-iliac joint
etc. for all four positions.

1. L. O. A. is commonest.
2. R. O. P. " next.
3. R. O. A. " " .
4. L. O. P. " last.

} Relative Frequency.

Cranial no. 1. L. O. A.

Before labour, head lies in pelvis more or less transversely, not in anatomical trans. diameter, but in one bi-secting the conjugate.

"Clearing the brim" means that the broadest part of head has passed through the brim of the pelvis.

On p. v., you touch the head at an angle. You also touch r. parietal near tuberosity.

Sagittal suture is in right oblique diameter, dividing the os into 2 = 1/2s. Post. & ant.

Lecture 31.

Obliquities are:-
1. Solayer's or Pelvic.
2. Roederer or Occipito-frontal.
3. Naegele's or Bi-parietal.

also can be touched, but the ant. one can't be.

Movements of Head & Body.

As it passes from the brim to exterior, the head performs certain movements.

Descent characterizes the whole process.

1. Flexion. Its nature, sphere, cause & effects have to be considered.

Pref. fontanelle is placed opposite the left cotyloid cavity. It descends & approaches centre of brim. Chin is strongly flexed on chest. Back of neck lies on cotyloid wall. Forehead rises to right iliac fossa. Font. is in relation with right sacro-iliac joint.

Are three obliquities.

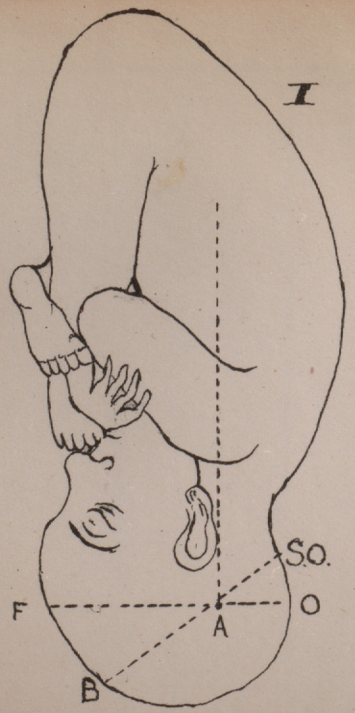
1. Solapper or pelvic. Head turns fr. transv. to the r. oblique. This is due to the head 1st. lying in the obstetrical transverse. When the woman is erect, the child has

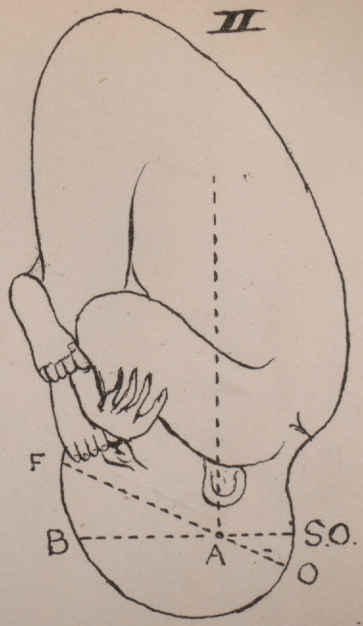
tendency to fall forward to the left. In addition to this tendency, the ~~fronts~~ anterior plane has direction forwards, the uterine contractions. Head descends to floor of pelvis in this obliquity. It is left in this diameter as the transverse diameter gets smaller as it goes down.

2. Reverse or occipito-frontal obliquity. When flexed, the head can't pass through pelvis with occipito-frontal diameter coincident with the brain, but the sub-occipito-bregmatic diameter corresponds with the r. oblique diameter. The fontanelles are not on the same level, the occiput being low & sinciput high.

3. Wrangle or bi-parietal. R. parietal protuber. enters the pelvis in advance of the left, so left ear is bent towards left

OF FLEXION.





I. Attitude of foetus previous to the commencement of Labour. II. Attitude of foetus after the production of "flexion".

OF. occipito-frontal diameter
SO.B suboccipito-bregmatic "
A. point at which the resultant of the forces expelling foetus crosses the occipital diameter.

J.H.B.

shoulder, sagittal suture will lie nearer sacrum than the pubes. Naegele thought the pelvis was horizontal & he was touching the r. pars bone at an angle. It doesn't exist in a normal labour. Examining finger always touches r. pars bone, as the pelvis is oblique.

Are two theories of the cause of flexion.

1. Lever.
2. Lab's.

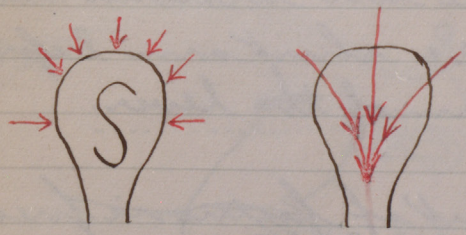
1. Lever. Head is articulated to sphe nearer occiput than the sinciput. If the foetus be pressed down, the occiput will be pushed down first if pressure all around head is equal, i.e. short arm before the long arm of the lever.

2. Lab's.

a. Every part of foetus is pressed on equally.

b. He says that the foetus is a

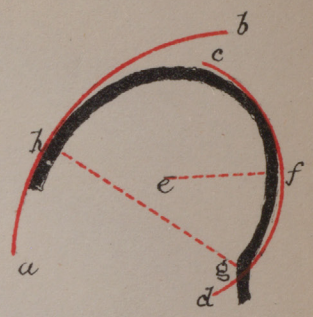
Lecture 32.



Flexion is most marked on head coming in contact with the hard structures of the pelvis. As long as normally the smaller the pelvis the greater will be flexion.

DIAGRAMS ILLUSTRATING LAHS' THEORY OF FLEXION

I



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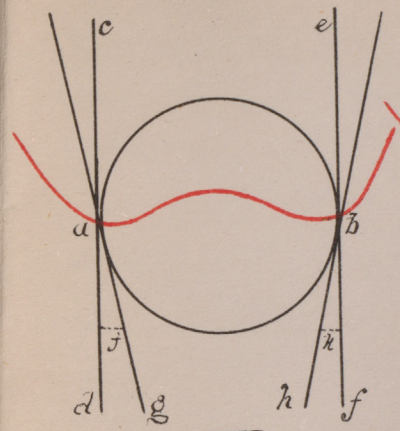

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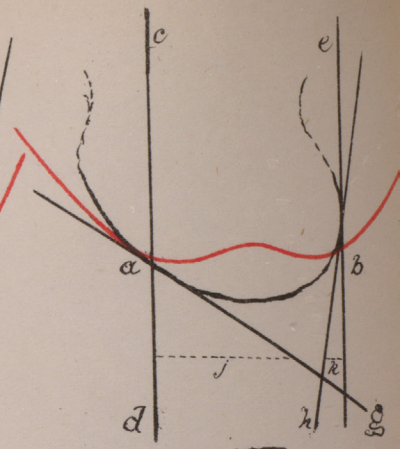


IV

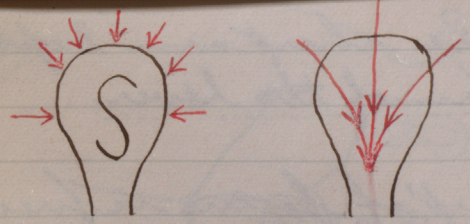
I. Outline of a Foetal head unaffected by labour - delivered by Caesarian section.

II. The thick line represents outline of Cranial vault.
ab. segment of anterior or larger circle
c.d segment of posterior or smaller circle
gh. radius of anterior circle
ef. radius of posterior circle

III. Shows mode of descent of a sphere through a "girdle of contact" ab.
cd and ef - perpendiculars drawn through "girdle of contact"
ag and bh - tangents to the circle at the points of contact ab
j and k are equal angles formed by tangents and perpendiculars.

IV. Shows mode of descent of Foetal head, not being a sphere, but made up of segments of circles of different diameters (vide I and II)
ab "girdle of contact"; cd and ef perpendiculars; ag and bh tangents.
j and k are angles differing in size j greater than k.

J.H.G



mollusum mass. (Humbug)

c. Resistance is least at the cervix.

d. Result of force is equal.

e. Girdle of contact; a point all round the os which touches the head.

f. Assume equal resistance of girdle of contact.

g. Assume a & f ~~xa~~ symmetrical head, then head will descend horizontally.

h. But head is not symmetrical.

i. Segment of circle is less ~~than~~ at occiput.

j. Hence head does not descend "even"

k. Occiput in advance of forehead, Hence flexion.

Where is sphere of flexion?

Flexion is most marked on head coming in contact with the hard structures of the pelvis. As long as normal, the smaller the pelvis the greater will be flexion.

Gains by flexion are
1. Renders neck stiff & head, neck & body form a uniform solid body.
2. Sub-occipito-bregmatic diameter is substituted for the long occipito-frontal. The more flexed, the shorter is the a-b, diameter.
3. Circumference of head is less on flexion, as it is greater at occipito-frontal diameter than elsewhere.

2. Internal Rotation. The forehead & vault: front of vertex, lying against right sacro-iliac joint, follow the incline downwards & backwards & turn into hollow of sacrum, while occiput & back of neck, lying behind left for, ovale, follow the incline forwards & slightly upwards until occiput comes under the arch of the pubes.
Spine theory is that left spine

helps occiput from going backwards, & face from going forwards. This doesn't explain occipito-post. presentations.

Plane theory. Head will go along the smooth planes of the pelvis. Inclined planes run down & forwards (ant.) & down & back (post.) This premises that the head & pelvis have no soft parts. Head goes forwards as there is less resistance there than behind, & the post. structures recoil & press head forwards. A 4th. theory is that the lateral wedge shape of head helps if, but is not.

Where does rotation take place? Usually, it occurs at the floor of the pelvis, but not always. It may take place at brim or not at all. When applying forceps, don't try to rotate the head, but

Lecture 33.

simply apply the "vis a fronte", as rotation may be unnecessary or may need to be in an opposite direction to your rotation.

Effect of rotation is to keep the head in the largest diameters of the pelvis.

Essential conditions for rotation are

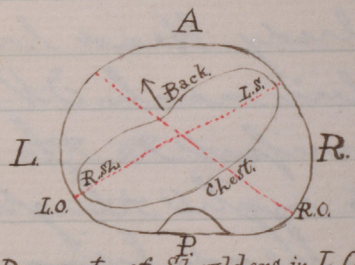
1. Well marked flexion.
2. Strong labour pains.
3. Firmness perineum the better the rotation.

3. Extension. Back of child's neck after rotation is caught under pubic arch. Post. fontanelle is in centre of pelvic outlet. Occiput, vertex, forehead, face chin sold one after the other over narrow perineal ~~surf~~, concavity head is born.

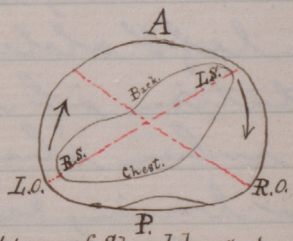
Cause of extension is obvious. Uterus pushes head down & back, perineum pushes it

up & forwards, so line of movement is between the two. It occurs at floor of pelvis when ~~under~~ post. fontanelle is in centre of the vulva. Effect this to cause head to be born.

4. External Rotation is counterpart of int. rotation. It a movement communicated to the head by the body. Head lies under the pubic arch. It turns with occiput to the left, & face to right thigh of the mother, head lying obliquely. In extension, shoulders occupy transv. diameter, but they face into left oblique, so cause rotation of the head. It occurs when shoulders are caught on brim, its effect is to bring shoulders into the most convenient diameter. "Descent" & "Levelling" go on during all these movements. Descent



Descent of Shoulders in L.O.A.



Rotation of Shoulders in L.O.A.
(Arrows show direction of rotation.)

is progression through the pelvis. When foetal head starts in labour the fontanelles are on different levels, & "levelling" or "adjustment" is the bringing these on one level, i.e. head assumes the occipito-frontal diameter.

Movements of Trunk.

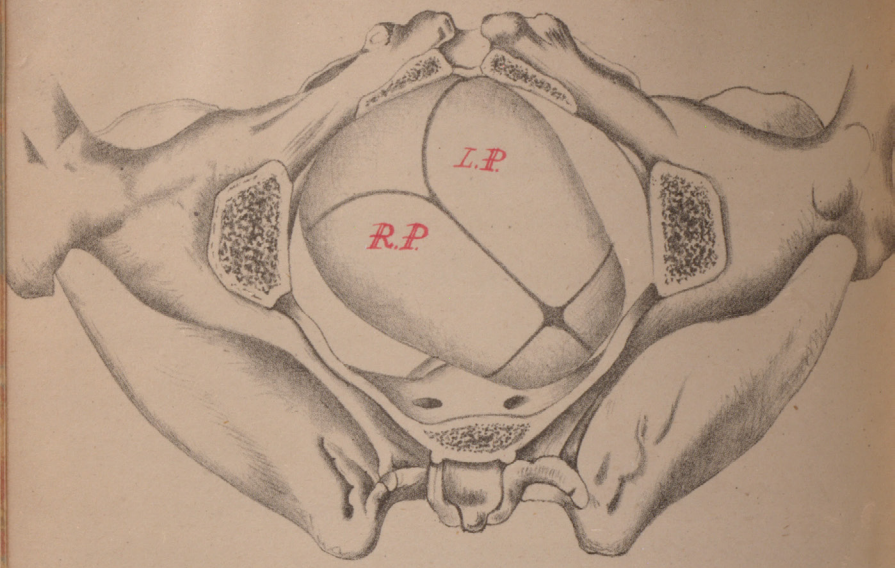
1. Descent or continuous progression takes place. Shoulders pass from down to cavity of pelvis in the left oblique, with back looking to left & front, thus passing down in an opposite diameter to that in which the head passed.

2. Rotation is counterpart of int. rotation of head. Right shoulder moves forwards & gets under arch of pubes & left shoulder gets into the hollow of sacrum. Head is now transverse.

3. In a circle. ~~Right~~ Left shoulder,

VERTEX PRESENTATIONS

II

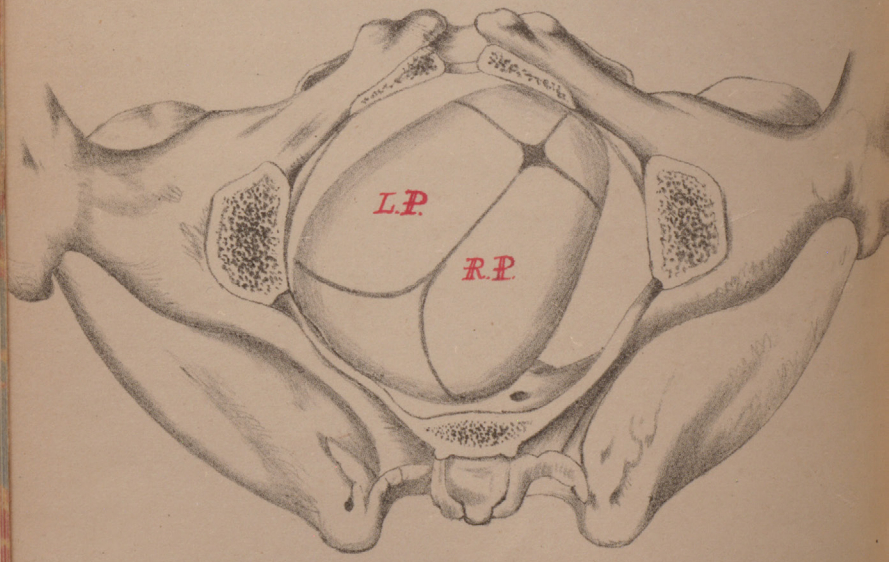


RIGHT OCCIPITO-ANTERIOR – R.O.A.

Second of Naegele. Third in frequency.

VERTEX PRESENTATIONS

III



RIGHT OCCIPITO-POSTERIOR – R.O.P.

Third of Naegele. Second in frequency.

side of body, thigh & hip roll over sacrum & the child is born. (Right shoulder is fixed under the arch of pubes.)

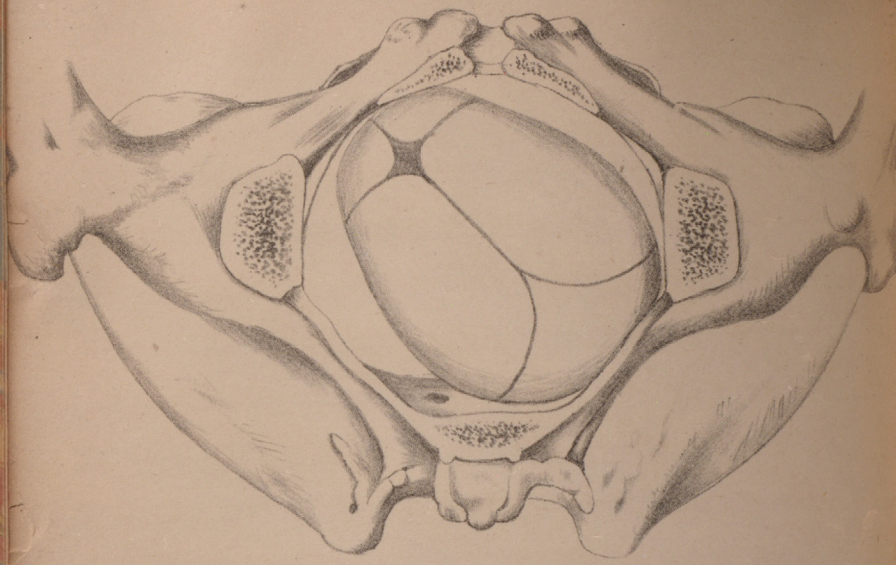
Cranial No 2. R. O. A.

Mechanism is the same only you substitute left for right. Head lies in left oblique. Fingers touch left parietal. Careful manoeuvre ~~from~~ to right ~~to~~ from left, no position can be told.

Cases occur where flexion is slight & rotation may not occur. If head is small or pelvis is large, you may have differences in the mechanism.

Cranial No 3. R. O. P.

This is the most common occipito-post. position. Primary R. O. P. is rare, but often occurs secondarily. In R. O. P. head lies with the



LEFT OCCIPITO-POSTERIOR – L.O.P.

Fourth of Naegele. Fourth in frequency.

occiput back towards right sacro-iliac joint. When you get this, you have imperfect flexion & cervix is very slowly dilated. Ant. font. can be more readily felt than in an ant. position & post. font. is not so well felt. Head is in right oblique diameter, & is pushed down into pelvis in right oblique. In good cases, the flexion becomes more marked as it descends. When head gets to floor of pelvis, usually, the occiput swerves around the whole side of pelvis to lie under arch of the pubes, going from right to left, lying at in occipito-anterior.

Occiputo-post. usually becomes " -ant. by performing long rotation.

Sometimes, if flexion is badly

marked, & pains are weak, the occiput rolls into hollow of sacrum. ("face-to-pubes" case, or "persistent occipito-posterior".)
Resiliency of pelvic floor & ligaments may cause these rotations.
The head may get caught by the spines, but this is rare.
Long rotation takes place in most cases, as where the pains are strong, flexion is good & perineum strong.
Jamming of head is due to prominence of the pelvic spines.
Occipito-pect: is tedious, as
1. Want of flexion in 1st. stage.
2. In 2nd. stage because of long rotation & persistent occipito-pect: Latter is tedious, because the pains throw occiput up against

~~Inverse of Laplace continued, on page 168~~

Lecture 34.

vacuum instead of antiseptic.

Management of Labour.

Do your very best for patient, & go at once, as if you are called too soon, it is all right, but if called too late you go at once, it is not your fault. Also you may rectify a mal-presentation, prolapse of cord etc.

Know your duty. Be very clearly in all things, as you may set up puerperal fever otherwise.

Never attend a lying-in woman, when you come straight from a fever case unless thoroughly antiseptisised. Turkish bath is good for this.

What to take with you.

1. Enema syringe with vag. end.
2. Male (No. 8) gum-elastic catheter.

3. Stethoscope.
4. Ext. Ergotae Liq. or
Ergotin for hypodermic use.
℞.
Ergotin. ʒ ij.
Chloral Hydrat ʒ i.
Aq. Distil. ad ℥ j.
Liq. Inject in XX or XXX drop
into Nettock.
5. Hypodermic syringe.
6. Needles & sutures.
7. Ether for stimulant (hypoderm)
8. Chloroform.
9. Liq. Ferri Perchloridi.
10. Forceps.

Attendants

1. Monthly nurse.
2. "Mother-in-law."

Room.

Choose best room in the house
even if drawing-room
Should be airy & bright.
Have fire-place, very few
hangings. Try & get a dress-
ing room, if possible, off

the room.
You need vaseline etc: to lubricate your hands with. Have plenty of hot water, towels, diapers & clean linen & a bed-pan. An invalid's cup is useful also.

Patient.
Dress should be light & dry, eg. chemise, night-gown & old petticoat. Hair should be plaited, if long. While in labour tuck chemise up under arms - pins to keep it dry.

Bed.
Some nurses can't do this, but it's arrangement is very important.
Draw mattress out a waterproof sheet, eg. Put a blanket over this, & then the ordinary sheet. Over this put

double, a sheet over place that woman is to lyd on. Pin the lower ~~part~~ to the mattress. On top of this again place another waterproof sheet to be removed just after labour. Lower one is to prevent escape of lochia into mattress during the puerperium. Have a sailor or old sheet on top of the patient. Pin the top sheet to the coverlet, so you can slip your hand under it easily. Remove superfluous things after the confinement.

Clutter and Ist. Visit.

Ascertain

1. Primipara or pluripara.
2. Duration of pregnancy.
3. Urban or rural pt.

Make a p. v. with patient on left side or back with

buttocks on the edge of the bed. In Ireland, they deliver the woman on her hands & knees.

Don't examine patient roughly. When you enter the room, talk to the patient for a time. Necessity of an examination is usually explained by the nurse, but you may have to do it.

When to examine.

In primipara, it is best to begin it during a pain as patient don't pay much attention to it then. Keep fingers in until pain is over & then diagnose the presentation.

Always oil the fingers as it replaces the mucus removed & prevents maceration of your fingers.

Hromnik exam: you ascertain

Lecture 35.

1. Pregnancy.
2. Whether in labour, i.e. ~~bin~~ false or true pains.
3. Condition of membranes.
4. Presentation.
5. Stage of labour.
6. State of os, i.e. rigid etc.
7. " " vagina i.e. roomy, moist or dry.
8. State of perineum, i.e. rigid etc.
9. Shape of pelvis.
10. Prolapse of cord or rol after rupture of the membranes.

Avoid too frequent exams, esp. in 1st stage, as they render os irritable. Only examine once during 1st stage, but may be more frequently during 2nd stage. Always examine the patient, & be sure make out the os.

(~~Mechanism of Labour Cont. fr. p. 168~~)

Positions vary with the stage of labour & in diff. countries.

The os is usually well up & far back.

In this country, you usually give chloroform. In giving this, you may give it in a normal labour to mitigate the pain or in abnormal labours for operations. It's great immunity from depth from chloroform in obstetric operations. In an ordinary labour, give the chloroform on a towel or kerchief, & only during pain, not making the patient unconscious except towards the end of labour. Don't give it until the second stage unless specially indicated.

Crum uniformly gives chloroform, but it is apt to render the uterus relaxed after labour & so produces post-partum haemorrhage.

You will be asked by the

patient if all is right. Say that it is, as nothing, as the patient may be very much alarmed needlessly.
You rectify all mal-presentations under anaesthesia, but when life is in danger, it is a diff. matter.
"When will all be over"?
"It depends upon yourself" etc. etc.
Don't put the patient to bed during the first stage, & don't nurse the patient but simply deliver ~~the patient~~ her. Crane once went to assist at a case & found patient & practitioner sound asleep, the latter having his fingers in the vagina & his head on her buttocks.
Make an examination in the first stage to find out the presentation, another during the 2nd. stage to

find out how all is going on, rather one when the head is in the perineum, but don't examine too often. Use stethoscope occasionally to see condition of foetus.

See that bladder & rectum are emptied.

During expulsive stage, give patient something to pull on or squeeze.

Don't use stimulants for patient, nurse or doctor, but have a sealed & corked bottle in the room in case of accident. Never eat or drink in your patient's house.

You gain your patient's confidence & respect by taking no drink.

If stimulants are required by patient, give ether.

When head has descended on the perineum, you were

told to support it, but let it alone. Formerly the lds, used to support the perineum, but now the (torn) perineum supports the doctor (L. Fait.)

Usually, the perineum gets torn more or less.

When head is born, receive head of child in the nurse's right hand & put your hand over the fundus.

Sometimes the cord is round the child's head, when you free it by pulling it over the ~~child's~~ head.

Don't fail to place your hand over the fundus uteri & follow child's body down. Don't take your hand off the fundus until uterus is contracted & placenta expelled. The great secret of good obstetrics is exerting supra-

fundus pressure & avoiding any traction. Pulling the bull after the head is born, you may see that the cord is all right.

After child is born, you usually have cessation of pains for a time. See that nurse makes the child cry audibly.

Tie the cord twice, at the distance of 2½ or 3 inches from the body. If there is much Wharton's jelly, it needs to be tied very tight. If the stump bleeds after cord has dropped off, it is very dangerous. Best method is to transfix the cord by two needles at right angles to each other.

Give child to the nurse, & see that eyes & mouth are thoroughly washed & cleaned. Some apply $AgNO_3$ sol:

Lecture 36.

to the eyes, as soon as born, (Simpson), but, Crosse doesn't believe in this.

Attend to the mother & let the foetus alone as to myre.

Always be sure that there isn't a second child in the uterus. In a case of twins, the second one may be very small, but can be discovered manually.

Antiseptics.

Whatever your views are concerning antiseptics use them always in obstetrics, as they are very beneficial here.

Puerperal sepsis used to be very prevalent, but, since the adoption of antiseptics, it has been almost stamped out in Maternity Hospitals.

After the forceps, comes the usefulness of antiseptics.

Sepsis may be introduced

either from without by the bands or by leaving something in the uterus. Where something has been left in the uterus & has set up septic, you may aid the woman by using an anti-septic wash for uterus.
In management of 3rd. stage is important. See that the uterus contracts. If ~~it~~ the uterus remains large & flabby the placenta is still retained. Never pull the cord, as, if you do, you cause placenta to be torn & may cause hæmorrhage.
Deliver the placenta by Credé's method, i.e. by expressing the placenta with the fingers over fundus & thumb in front of uterus. You grasp uterus in left hand, kneading it till it contracts, & then squeeze it

down & back until the placenta is expelled.

Nearly all women need some assistance in expelling the placenta, but if you ~~go~~ try more than simple pressure, you may produce retention of membranes or pelvic peritonitis. Only press during the pain but keep your hand over the uterus constantly.

Don't hurry the placenta, pull if it is not born in ~~½~~ one hour, ~~the~~ as contracts & gives trouble. Take time & take advantage of every pain.

You don't have ~~the~~ placenta expelled externally, but into the vagina. You see the edge & you may twist it out by simply twisting (the membranes) them into a rope. Don't pull in the slightest. If the membranes are tearing, don't insert your hand & pull them out, but

tie a string around it & then twist.

After birth of placenta (& woman is better) place it in a basin of water & see that all is right. Be sure & always do this.

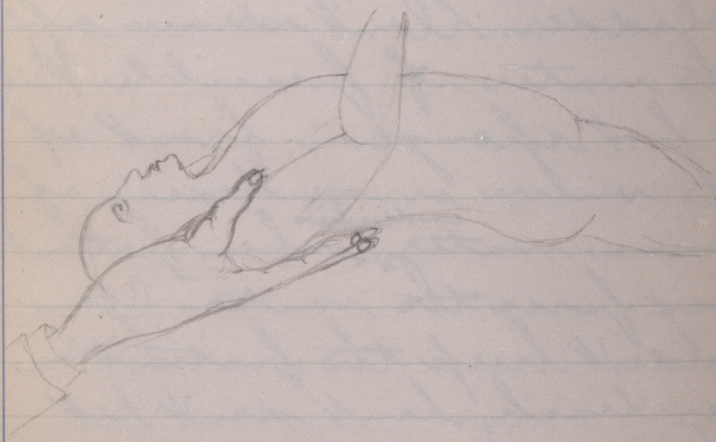
See that uterus remains contracted & keep your hand on it.

Pulse should be below 100, if it is not you may have hemorrhage.

Instruct the nurse to apply a binder just before you leave the house, & stay with patient an hour after the delivery. This binder is simply to give comfort & support.

Before leaving patient leave instructions where you are to be found, be sure the uterus is contracted, pulse normal & no bleeding.

You are to be sent for if there is rigor, bleeding etc. Revisit the patient in twelve hours. Ask if patient has passed water. Don't trust to the answer but try & feel the bladder. A raised uterus indicates dilated bladder. Don't draw off the water if possible. Put a hot sponge in front of the vulva or a basin of warm water under her, when patient may pass the water. You needn't keep the patient on her back, but don't let them get into an erect position. Retention of the urine is reflex, due to tearing the perineum, haemorrhoids etc. A plum stone in the anus may cause it. The diet ought to be reasonable & patient not starved. Give light diet for first



couple of days, but after that let them have ordinary diet, if tongue is clean & bowels open.

Milk appears about 3rd, day usually. Apply child after 1st 24 hours.

"Still-born" child merely means that it doesn't cry or move after birth.

Best thing is to see that its respiratory passages are free by swelping finger around back of mouth. Apply cold water or brandy etc: to chest. If these fail try Schultze's method of resuscitation. Place ~~fingers~~ thumbs in axillae with ~~fingers~~ ~~others~~ at the back. Throw it back & forwards over the shoulder a few times a minute. Proceed as long as heart's action is observed.

Artificial respiration may

Lecture 37.

Unnatural Labour.

1. Laborious.
   a. Lingering.
   b. Instrumental.
2. Preternatural.
3. Complex.

Faults in Powers.
" " Passages.
" " Products.

Faults in Powers are:—

1. Inefficient action of Access. Muscles
2. Spasmodic irreg. contractions of the uterus.
3. Inefficient action of uterus = (Uterine inertia.)

also be performed by sitting the child on its buttocks & flexing & extending the body on the thighs alternately at the rate of 2 or 3 per minute.

Unnatural Labour

may be due to waste of harmony in 3 powers.

Faults in Laborious.

a. Lingering:

Faults in powers are "inertia, uteri."

Causes of inertia uteri are

1. Gen: weakness of constitution

eg: debilitating diseases, eg: phthisis, but there is a compensation by resisting tissues being soft & relaxed.

2. Intestinal irritation, eg: loaded rectum or distended bladder, & when relief is effected labour goes on rapidly.

3. Residence in tropics often

renders labor slow, thus gives rise to post partum haemorrhage by causing the inertia.

4. Women who become pregnant quickly or rather rapidly are apt to have uterine inertia.

5. Women who become pregnant first early or late in life have secondary uterine inertia, as the parts are firm & unyielding so tiring out the uterus.

6. Mental emotions, eg: practitioner appearing suddenly or unexpectedly, bad news etc,

7. Accessory muscles are affected by bronchitis, heart disease & cancer.

8. Organic disease of uterine walls.

9. Overdistention of uterus by liq: amnii or twins.

10. When liq: amnii drains off early.

Good grains are long, frequent & strong.

11. Anteversion or pendulous belly, ("misdirected uterine force.")

Feebleness of contractions may begin abruptly or be present during whole labour. Length & frequency of pains are judged of by watch, & strength by examination p. v.

Treatment.

Patience is necessary on both sides. Cheer & encourage patient. Give nourishing but non-stimulating food & never give alcohol. Look to bowels & bladder. If bowels are full use an enema. Having done these & inertia is still present give opium or chloral to allow patient to have a rest. Crom prefers opium but Simpson prefers chloral. Opium acts best on uterus prefer, but

Quinine should never be
given to a pregnant woman
for neuralgia etc., as it is
very apt to cause abortion
or premature labour.

chloral acts on cervix so
is best in secondary inertia.
If it persists in spite of
this, look to position of
patient. Keep her up unless
labour is far advanced.
An abdominal bandage,
esp. in anteversion, is good.
Oxytocic remedies hasten
birth, eg: borax, cinnamon,
Indian hemp etc. (useless)
but quinine, ergot of rye
are useful. Quinine has no
effect on the unimpregnated
uterus, but it has on an
impregnated uterus, precipi-
tating labour.* Quinine is
uncertain in action. The
only drug to be depended
on is ergot of rye. Its effects
are not like ordinary pains.
In large doses, you have
strong continuous contrac-
tions, so must be given
carefully. Ergot may be given

"Expressio foetus".

in powder (15 grs.) liq. extract (ʒ ss-j.), ~~tinct.~~ (ʒ j) or as ergotised. Crooms never gives it until labour is over, but most people give it at other times. When passages are fully dilated & action of uterus feeble, you may give it during the progress of the labour. Never give it to a primipara, or if there is the slightest obstacle to delivery of the head. It is esp. good where placenta is slow in birth in 3rd. stage, but Crooms would only give it in 2nd. stage where a little more force only is required, & after the placenta is expelled to prevent post-partum haemorrhage.

Abdominal friction may stimulate the uterus.

You can sometimes express

the foetus, as where head or breech is low in pelvis only a little force is necessary to expel it, but these cases are rare. Never attempt this if uterus is tender on pressure, patient is exhausted or if there is tonic uterine contraction.

Uses of Forceps.

Are no class of cases in which forceps are more useful than in these cases of uterine inertia due to firmness of the pelvic floor. The risk here is that the inertia may continue into the 3rd. stage. It is very easy to pull the foetus out, but you may have an enormous gush of blood & patient be dead in a few minutes.

Deliver very slowly, & be sure while delivering with one hand to follow child down

Lecture 38.

with the other hand over uterus. As soon as child is born grasp & bread the fundus firmly, letting the nurse attend to the child. Always have hot water beside you, as well as the other remedies for post-partum haemorrhage.

Precipitate Labour.

Is rarer than hasty

Are 2 kinds:-

1. Caused by excess of expulsive power.
2. Elimination of resistance, i.e. laxity of tissues

Most labours depend on the constitution.

Some women always have rapid or slow labours.

Most rapid labours occur during suffocation.

Chief danger of 1st class is perineal tear; while in 2nd class you may have syncope,

inversion, prolapse or haemorrhage.

Rapid labour comes on in exanthematous, where large doses of ergot are given, where pelvis is large or child small, where violent contractions occur rapidly ~~from~~ ending possibly in epilepsy or apoplexy the woman here being often unaccountable for her actions.

If you are dealing with this, avoid all stimuli, keep patient recumbent, don't make examinations, tell her to open her glottis & breathe easily without making any effort. Give chloroform.

Differentiate fr infanticide from precipitate labour in w. c.

Child may be expelled with such force as to tear the cord, but child doesn't bleed

Faults in Passages.

1. Rigid Os.
2. Occlusion of Os.
3. Hypertrophy & elongation of Cervix.
4. Impaction of fold of Cervix.
5. Obliquity of Uterus.
6. Rigidity of Vagina.
7. Inversion of Vagina.
8. Unruptured Hymen.
9. Rigidity of Perineum.
10. Conditions of Bladder.
    a. Distended.
    b. Prolapsed.
    c. Calculi.
11. Scybala in Rectum.
12. Prolapsus Uteri.
13. Tumours of Soft Parts.
    a. Fibroid.
    b. Ovarian.
    c. Sanguineous.

to death as vessels are torn.

Faults in Passage.

Rigidity of lips & cervix cause delay in the 1st stage.

Are 3 kinds

1. Spasmodic contraction of internal os.
2. Simple organic rigidity
3. Rigidity due to inflam., cicatrix & malig. disease.

1. Spasmodic contraction is usually associated with irreg. uterine contractions. The band is felt as a ring at internal os, before the head. When this is overcome by head, the band may contract around the neck & strangle the shoulder. It is often due to meddlesome midwifery, as where many examinations are made. but it may also arise from any cause of the irregular uterine contractions, eg. loaded

rectum or bladder. Best treatment is to give a few whiffs of chloroform. If you can't get a drug at all, you may benefit the woman by injecting a little warm water into vagina.

2 Simple organic rigidity is met with very commonly in young or old primiparae, & nervous emotional temperaments. It is independent ~~of~~ ~~of~~ of any morbid condition. Cervix may be thin, cartilaginous, firm & tense, or hard, thick & oedematous. First condition occurs in primiparae, other in multiparae.

It is usually dry, hot & tender.

It sometimes comes about when membranes ruptures early, the condition then being serious, but otherwise

it is not.

Treatment of rigid os is to leave it alone in many cases. Tartar emetic & ipecacuan are administered by the older practitioners on account of a sick labour being supposed to be good. Opium is the best drug to give, using small doses (1/4 gr. every 1/2 hour) until the physiological effect is observed, when you give chloroform, the rigidity so being overcome. You may inject hot water into vagina or rectum, but this does little good. Chloral may be given with benefit, but not so good as opium or chloroform; in fact is better in vaginal obstruction. Warm hip baths have been recommended, but are not to be advised. Dilatation by Barnes' Bag is

not to be used for this purpose under any consideration in organic cervical rigidity, as the bag can't be pushed into the cervix but merely dilate the vagina. Best dilators of cervix in this condition are your own fingers. If this is done carefully, & fingers & cervix are kept lubricated, the effect is very good. Press with pulp of fingers all around gently but esp. in front first. After 2 or 3 fingers can be admitted, push them in like a cone dilator. Crosse says never to use these forceps, if you can possibly help it, as you may cause a rupture of the cervix, when you pull on the child. If the forceps are put on as a dernier resort, watch the cervix, pulling with one

Lecture 39.

THE PUERPERAL STATE.

1. Involution of uterus. Its rate.

Its causes.

Retraction.

Contraction.

Fatty degeneration.

Peptonuria.

2. Involution of cervix and vagina.

Condition of—

a. Pulse—Retarded.

b. Temperature—Increased.

c. Skin—Diaphoresis.

d. Urine—Increased—peptones—sugar.

e. Alimentary canal—Thirst, constipation.

f. Blood—Hyperinosis—anæmia.

3. After-pains.

4. Lochia.

5. Lactation.

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3. After-pains.

4. Lochia.

5. Lactation.

hand & keeping the other hand on the cervix. If the cervix doesn't dilate as it should, take off the forceps, & try dilatation again. (See page 200)

Puerperal State.

This is the period following delivery, during which the uterus, genital organs & whole economy return to their ordinary state.

Women usually sleep after delivery without any difficulty, but sleep should not take place too soon lest haemorrhage takes place unawares.

Diet. Avoid butcher meat, but don't starve the woman.

Women should be seen twice the first day after confinement, once every day for the first week ~~& then no more~~. & then once every second day for a week or more.

Involution of Uterus is the process by which it comes down from 12 in: long to 2½

Immediately after labour, the uterus contracts & feels like a cricket ball, being two fingers breadth below the umbilicus. You can feel alternate contraction & relaxation. Some 6 or 8 hours after labour, you find the uterus long & about 2 inches above the umbilicus.

The rate of diminution in size of the uterus is as follows:- For the first few days, it diminishes rapidly; on the 6th is 2 in: above pelvic brim & after the 11th. can no longer be felt.

The uterus gains its normal size (2½) in about 6½ weeks.

The uterus may be ~~pore-~~ ventral

from diminishing in size by retention of urine, the bladder drawing the uterus up.

It decreases gradually in weight until it reaches the normal ℥j ~~is reached~~.

Causes are 4, viz:-

1. Retraction } Fibres pull themselves together & so exclude
2. Contraction } large vessels.
3. Fatty degeneration.
4. Peptonuria. i.e. excretion of peptones by urine, which greatly helps involution.

<u>Cervix</u>. Int. os contracts first. Fissures & excoriations can be felt ~~first~~ per vaginam. Vaginal part of cervix doesn't return to the normal for a considerable period. The vagina is smooth without rugae & you may have lesions of the mucous membrane at entrance of the vagina after labour. The vulva gape

& vagina never regains its rugosity properly.
Pulse is always retarded, esp. in multiparae, but is full & forcible however.
Some say retarded pulse is due to ~~that~~ diminished arterial tension ~~is~~ (due to loss of blood) rather to increased arterial tension (Cross)
~~Another~~ Other causes of retarded pulse ~~is~~ mental & physical rest, impoverished blood & sparing amount of nourishment.
The temperature is always slightly reduced for ~~the~~ first six days. Causes of this are combustion of debris, reaction of wounds, lactation, & hyperaction of ~~the~~ skin & kidneys.
Skin has its action increased ~~so~~ possibly ~~the~~ debris is ~~get~~ rid of, & an eruption like that of scarlet fever may occur.

Urine is increased greatly for the 1st few days, pale, clear & has sp. gr. 1015.
Urea & NaCl are somewhat ~~increased~~ decreased, phosphates & sulphates greatly diminished.
May be sugar in urine, said to be due to absorption from the milk. Peptonuria is ~~greatly~~ present.
Retention is common & due to reflex causes. It is told by uterus being high up. For this, the hands & knees position may be useful as well as for getting rid of clots. Hot sponge ~~of~~ over mulva may do good. If all fail draw it off.
Thirst is often great & should be satisfied.
Constipation is common, due to
1. Quiescence of patient.
2. Not taking much solid food.

3. Marked elimination of fluid by other organs.
4. Diminished peristalsis.
5. Relaxed condition of the abdominal walls.

On 3rd. day, patient usually takes a purgative.

In the blood, there is hydraemia, increase of white corpuscles, fats (containing phosphates), xanaemia.

"After-pains" are simply post-partum contractions of the uterus, are most frequent in multiparae. If present in primiparae, there are usually clots in the uterus.

Are more frequent after an easy labour than a long one, as in the latter case the uterus is tired out.

Their objects are to expel a foreign body & to prevent haemorrhage. After each one, there is usually a gush of

lochia. Application of child to the breast increases the pains. Sometimes are bad enough to make patient cry out.

They must not be confused with perimetritis.

After-pains	Perimetritis.
Intermittent.	Continuous.
Relieved by pressure.	Not rel. by pressure.
Abundant lochia	Lochia dries up.
Temp. low.	Temp. high.

Treatment is preventive & palliative. Don't hurry labour, but use Credé method. Give ergot at end of second stage. Palliative is to do nothing in mild cases. If you suspect a clot remove it. If they still continue apply fomentations & give an opiate.

"Lochia" = matters escaping from the ~~uterus~~ vulva from delivery to the time when the uterus has regained its former size.

Lecture 40.

No lochia is seen for 1/2 hr. after birth of the placenta, but then appears as a bloody discharge

As time goes on, white globules increase in number. On 3rd. day, ~~they~~ lochia diminish, but increase when milk is fully established. Blood gradually decreases in amount until the discharge gets yellowish white. Lochia are present for two or three weeks.

(Rigid os cont'd. fr. p. 193.)

When membranes have ruptured & cervix is thinned out, the condition is dangerous, as uterine rupture is apt to follow.

Rigidity due to cicatrices is observed in multiparae often. Cicatrices rarely interfere with labour, as they usually soften & disappear during

pregnancy. They are to be overcome by usual way (by opium, chloral, chloroform & dilatation ~~of~~ by fingers)
Hypertrophy & elongation of cervix often impedes labour. Child's head may pass through all right, but an enormous thrombus may pass on one or both lips. Thrombus must be punctured, & child extracted by forceps. But the cervix may not dilate, so Barnes' bag is useful here, as you have a tube to act on. After dilatation, you may turn if membranes have not ruptured & liquor amnii escaped, but if they have use forceps.
Malignant disease. Women with this seldom become pregnant, due to acrid discharge destroying spermz. Women with this often miscarry, but you

have risk of profuse hae-
morrhage & septicaemia. If the
labour goes on to full term,
the cervix doesn't dilate
but tears, so that you may
have profuse haemorrhage,
phlegmasia dolens, sep-
ticaemia etc. Fundus may
rupture & cause death.
If you see the case in time,
~~you may~~ & cancer is not very
extensive, you may cause
cervix to tear straightly
incisions. In this case, the
woman will only live for
a short time, so you may let
her run some more risk than
in ordinary cases. If child is
necessary, use forceps; but
if cancer is slight & woman's
life esp. valuable destroy
the child, but, if cancer is
~~v~~ very bad, you may per-
form Caesarian section.

Occlusion of Os.

This is very rare. It usually takes place after impregnation, where women suffer from ulceration of cervix, & has been treated with escarotics, causing occlusion. You will usually find an os somewhere, most cases of occlusion of os have been where men didn't look for ~~them~~ it sufficiently. If you do meet it, make a few incisions in lower uterine segment with a probe pointed bistoury.

Infraction of a Fold of Cervix.

This is very common, & may extend down to vulva. Pinch up a lip & keep it there during a pain, when it will slip up after pain has ceased.

Obliquity of Uterus.

Are 3 forms.

1. Minor degree.

2. Anteversion.
3. Retroversion.

1. Lateroversion to one side may be in any degree, but doesn't interfere much with labour as uterus tends to straighten itself. When it does interfere, it is apt to produce face cases.

2. Anteversion has been referred to before. Occurs most commonly in multiparae, & may recur to any extent, uterus even hanging between patient's legs. Place patient on back & push uterus back by strong abdominal bandage, but labour may remain tedious, due to accessory muscles being useless. Either forceps or turning is necessary as in elongation of cervix. Fundus has to be depressed in order to reach head which lies high up.

3. Retroversion at full term is called "accentuation of the uterus". If it is left alone at 3rd month, you may have abortion, incontinence of urine, constipation etc. The fact alone the pelvis may grow upwards.
Pass finger around cervix & pull it down to normal position, when you may deliver by forceps etc.
Rigidity of vagina.
a. Cicatricial bands may result from old inflammations. Bay scars from side to side & you may mistake the opening formed for the os. The bands soften & disappear during pregnancy. If they interfere, cut them apply forceps & deliver without delay, but be sure & use antiseptics. After delivery see that there don't

form again.

b. Simple rigidity of vagina & rigid os often go together. Vagina is dry & shows stricture & wants distensibility.

Don't examine often, as the exams are apt to irritate the vagina. Use but water. In most cases, forceps are necessary.

When you have to deal with a labour that is obstructed in the second stage, don't let it last for more than 4 hours. Early & proper use of forceps is quite safe. All bad results of forceps are due to delay & improper use.

c. Tumefaction, congestion & inflammation of vagina indicate that the labour has been mismanaged, or the woman should have been delivered by forceps before

Lecture 41.

these occurred. When you do meet such cases, say you will do your best, but that the condition is a bad one. Deliver quickly with forceps.

Unruptured Hymen.

Hymen may not be ruptured by intercourse. Pregnancy may occur without complete intercourse. When it occurs, incise it, use forceps if necessary.

Rigidity of Perineum.

Occurs in young or old primiparae.

Are 2 kinds, eg. (1) where you have excessive contraction of muscles of pelvic floor, or (2) large amount of adipose tissue in perineum. It is usually simple uncomplicated, but is troublesome. It usually is overcome by nature, but early use of

the forceps is good. Care is necessary to prevent perineal tear. Tear is partial, or complete, or central.
Incomplete tear, involving more than 1/2 perineum, should always be treated as the ~~ref~~ ~~or~~ should a complete tear, although some say that the latter should be left till after the puerperium.
You repair perineum by silver or silk sutures ~~by~~ with curved needles on handles. Leave stitches in for a week.

Inversion of Vagina.

May occur during labour. Part gets pushed down & inverted. It is a livid cushion betw labia. May cause sloughing. Factors are long labium, lax ~~bear~~ vagina & large head.
Push it beyond child's

head or apply forceps at once.

Conditions of Bladder.

a. Distended bladder being an atonic inertia, & makes pains irregular, by interfering with accessory muscles. It is diagnosed by there being a secondary tumor supra pubically. Only a small quantity of water causes it as the bladder is an abdominal organ during parturition & its room for expanding is very small.

b. Prolapsed bladder is known as vaginal cystocele. Bladder don't rise as it should, but gets back into vagina, & so in front of presenting part. It becomes distended & tense, forming a fluctuating tumor. Whenever you doubt as to what you feel, don't operate until you have

full patient under chloroform, introduce the whole hand & feel the object. Draw off the water, but this is difficult as urethra is bent & meatus is drawn out of position. If you can't introduce a catheter, aspirate & push bladder over head.

c. Calculi in bladder are rare because of big bore, distensibility & shortness of urethra. If present & small, push it up into the bladder above the brim. If in urethra, dilate & pull stone out with forceps.

Scybala in Rectum.

Mainly obstetrical labour by setting up uterine inertia. If present clear out with enemata, & they may first be required to be broken up. Diarrhoea may

be a sign of constipation as scybala may form a tube through which the faeces escape.

Prolapsus Uteri.

This is rare as a complication of labour. Conception may occur in a prolapsed uterus. Prolapse may be of any extent, & may occur during pregnancy or before it. It may also occur during parturition where woman is allowed to stand up & walk while making parturient efforts before the canal is dilated.

It causes delay because uterus is removed from abdominal muscles & is so deprived of their help, & also because uterine muscle is jammed by pressure of head. When it has been

pressed for a long time, the cervix becomes hard & so won't dilate.
Danger is that you are unable to control the hemorrhage, as contractile power of uterus is lost.
Pregnant woman with prolapse of uterus aborts at 4th. or 5th. month. If seen in time, keep uterus in position by a pessary until the fourth or fifth month. If it occurs during pregnancy not much can be done except to apply a perineal bandage.
Prolapse during pregnancy may cause retention of urine & feces, when you must induce labour.
During labour, don't try to reduce the organ, as you may set up peritonitis. Facilitate labour by dilating

cervix by incisions, Barnes' bags etc. After dilatation of cervix don't let labour be too rapid, as you can't control haemorrhage very well. You may apply forceps. Don't interfere with after-birth until you have plenty of hot water to throw into uterus.

Tumours of Soft Parts.

Are 3 kinds.

1. Fibroid.
2. Ovarian.
3. Sanguineous.

1. How do fibroid tumours interfere with conception, pregnancy, parturition & laying in?

Prevent conception by the haemorrhage, leucorrhoea, & change in shape & size of uterus.

Interfere with pregnancy by causing abortion.

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Interfere with labour by causing inertia & by forming an obstruction to descent of head. It may be so large as to make delivery impossible. Obstruction depends upon their size, mobility & compressibility.
If tumour is in front of head, try to push it out of the way. If this doesn't succeed, forceps may enable you to deliver the woman.
If there is not room for this, break up & remove the child.
It affects puerperium by causing post-partum haemorrhage (primary or secondary)
2. Ovarian may bring about premature labour if present in pregnancy. If present in parturition it may cause obliquity of uterus & so cause dystocia.

may prevent downward progression of child's head by being in the lower pelvis.
Mortality here is great, due to the head pressing on the tumor & so setting up fatal peritonitis.
The tumors vary in size & are difficult to diagnose. The smooth, polished surface & its becoming tense during the pain may help you.
Chloroform the patient & examine both vagina & uterus.
Examine between & during a pain.

<u>Treatment.</u>

In fibroid, attack the fetus, but in ovarian, you attack the tumor.
Try to push tumor above child's head between pains.
If this doesn't succeed, puncture tumor & allow fluid to escape. Then apply forceps

extract child as quickly as possible. If trocar doesn't suffice to empty tumor, cut into it with a bistoury. If tumor is too solid, try apply forceps or destroy the child. Forceps on the unruptured tumor are to be deprecated.
If the woman is brought to you during pregnancy with a tumor, perform ovariotomy.
3. Sanguineous tumors may seem to interfere with labor. You have rupture of vessel and cellular tissue of vulva, a thrombus forming in one or both labia. They are dark swellings, occurring very suddenly, which aids diagnosis. Danger is great, as risk of septicaemia is great. Out of 124 cases, 44 were fatal. (Crosse.)

Deformed Pelves.

1. Forceps = 4 — 3¼ ins.
2. Turn = 3¼ — 3 " .
3. Embryulcia = 3 — 1¾ " .
4. Caesarian Sect. = 1¾ — 0.

J. H. Croom.

Cameron performs C. Sec. on anything below 3 ins.

1891.

Treatment. Rupture membranes, turn out clots, apply digital pressure, put on forceps & pull head down quickly so as to produce pressure.

Deformed Pelves.

When you speak of a small pelvis, you refer to the conjugate at the brim.

Degrees of contraction are

1st. is from 4 – 3¼. Forceps.
2nd. " " 3¼ – 3 . Turn.
3rd. " " 3 – 1¾. Embryotomy.
4th. " below 1¾. Caesarian section.

Each pelvis must be considered on its own merits. If no other diameter is affected, the above must be done.

Means of Investigating a Pelvis.

(1) Stature of body is to be considered. Normally short women are suspicious while

tall women are usually all right but not always so. Well built women with broad hips have easiest labours, while those with bent legs & narrow pelvis have bad ones. Distortions of upper extremities & clavicle & scoliosis are suspicious. A pendulous belly in a primipara means a narrow brim.

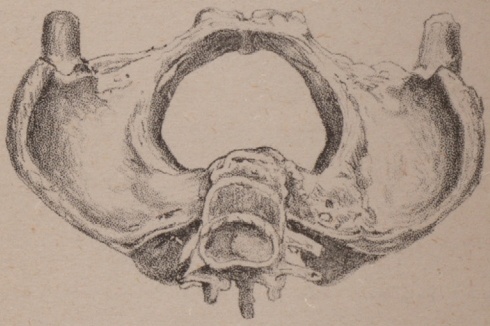
Pelvic deformity is easy of diagnosis in proportion to the degree.

Don't use callipers etc. to measure pelves.

Place patient under chloroform & measure diagonal conjugate with fingers in the vagina. You can't tell until you introduce the whole hand into the pelvis. Best plan is to introduce the closed fist & see if

NORMAL

JUSTO MINOR.-Forceps



it will pass through the bony, but this is rough & should only be applied as a dernier resort.

With calliper, you measure inter-crystal, & inter-spinous diameters, which have an inch between them normally, & you are to look out for the relative differance.

Justo Major.

This is simply a giant pelvis. "Æquilibratus" simply means that all is equally enlarged.

This is usually no impedi-ment to labour, but it is apt to be precipitate, facilitating all others.

Justo Minor.

Here all parts are equally diminished. Being has the same form as the normal

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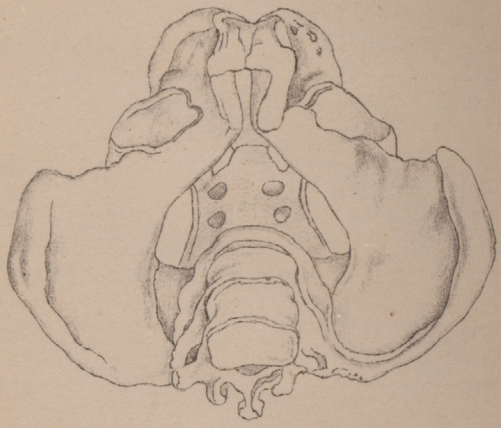
one, but smaller.

How does ...

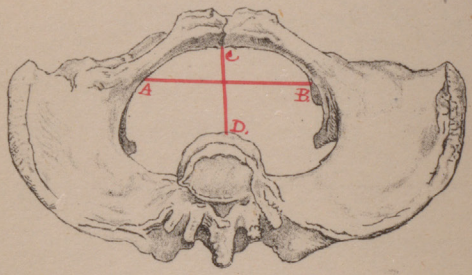
Deformity Pelvis.

is the most usual fre[illegible] and form[illegible]
of pelvis to justa[illegible]

MALACOSTEON.



FLAT OR RICKETY. Forceps.



AB nearly normal.
CD is shortened.

Done, but smaller.
How does mechanism differ in this case from a normal one? None, but head is more flexed in a justo minor than normal flexion. Extreme flexion only occurs where pelvis retains its normal shape. Extreme flexion is the only difference between this & normal mechanism.
Forceps is the mode of delivery employed in justo minor pelvis, but any kind of interference (except turning) may be necessary.
Post. fontanelle is felt to be well down, indicating extreme flexion & ∴ a justo minor pelvis.

Rachitic Pelvis.
Is the next most frequent form of pelvis to justo minor.

also called "flat pelvis." Rickets occurs before maturity, & affects shape & development of pelvis. A rickety skeleton is both deformed & undersized. The double abnormality intensifies each other. With regard to the pelvis, it is the brim that is chiefly affected. Deformity of brim is diminution of ant:-post: diameter i.e. promontory protruding & symphysis pubis pushed back. Transverse diameter is normal or slightly increased. Obliques are usually shortened.

In cavity, sacrum is straight instead of being curved. Outlet is expanded relatively or actually. Angle of pubic arch is increased.

Mechanism in Rickety Pelvis.

Can only be studied in a

Mechanism in Rickety Pelvis.

I. Extension.

Michaelis Obliquity.

II. Rounding Promontory.

Naegele's Obliquity.

III. Some degree of flexion.

IV. Internal Rotation.

V. Extension.

VI. External Rotation.

Deliver by forceps.

slightly or moderately affected pelvis. i.e. a little under 4 inches.

Os dilates slowly, as head is jammed at the inlet. Membranes rupture early. Head attempts to get through the brim in the usual way but can't, so oscillates around at that part until the bi-temporal diameter is caught in the conjugate. Occiput is thus caught, so that since occiput & the 2 fontanelles lie on the same level, occipito-frontal obliquity is destroyed. If head passes down, it does so transversely with the 2 fontanelles on the same level ("Michaelis Obliquity"). Head next "rounds the promontory", if pelvis is only slightly deformed. Posterior parietal or temporal bone fontanelle becomes fixed

N.B. Naegele's & Naegele's ob. liquity characterise mechanism in rickety pelvis.

against promontory, & the
ant. part of head swings
around under the promon-
tory, this promontory acting
as a fulcrum. The bone of
head pressed on becomes
indented. Baegelia obli-
quity is well marked.
Difficulty is now over as
conjugate is the obstetrical
Head is extended, & flexion
now is slightly marked ~~as~~
~~pelvis is expanded below~~
Internal rotation is slow
due to flexion being slight.
Extension & ext. rotation
now take place as usual.
When you feel head trans-
versely, & fontanelles on
same level, you know
that you have a rickety
pelvis.
If you see it in time, you
should turn, but usually
the membranes rupture

Lecture 44.

early ~~a~~ head may be caught at the brim, when you can't turn. If this can't be done, apply axis-traction forceps, when you can usually draw the head down. These forceps are put on the head anterio-posteriorly (as regards the head), the head telescoping. If head still sticks, don't take off forceps but perforate between the ~~forceps~~ blades & then draw the child's head through.

Lordosis.
Is arching forward of the lumbar vertebrae, overhanging the pelvis & so preventing the entrance of the head into the pelvis. Head is forced against front of pelvis.

Scoliosis
Is lateral curvature of the

spine. Scoliosis makes the pelvis oblique, i.e. one side larger than the other. Obliquity depends on the side of curvature. Cavity & outlet are expanded.
In most cases, use either turning or forceps, utilizing the largest side of the pelvis to bring down the large part of head in.

Kyphosis.
It's arching backwards of the lumbar vertebrae.
A kyphotic pelvis is a rare form of pelvis with transverse diminished & conjugate increased.
Promontory is drawn up & back out of reach. Lower end of sacrum is tilted forwards, so that conjugate of cavity & outlet is diminished. The difficulty of

delivery is at outlet, because you have difficulty in introducing the hand. You must use some instrument, according to the size of the diminution of outlet.

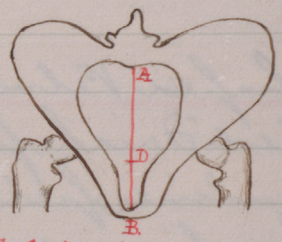
"Roberts' Pelvis" resembles the kyphotic. It scarcely differs at all in shape, but does ~~by~~ six cause. ~~Here~~ it is caused by double anchylosis of sacro-iliac joints, while the kyphotic is the bending backwards of the lumbar vertebrae.

"Funnel-shaped Pelvis".

Also called "Irish pelvis". It is a masculine pelvis that simply the character of a male pelvis (see page).

Difficulty of labour lies at the outlet.

It may be brought about by anchylosis of sacro-



AB = Virtual Cojugate.

AD = Available "

coccygeal joint.
Treatment is forceps or embryulcia, according to severity of the affection.

Osteomalacic Pelvis.

Osteomalacia occurs after maturity, unlike rickets.
The deformity affects the spine & pelvis chiefly. Bones become soft & yield to pressure. Pelvis forms compressible centre between the trunk above & legs below.
Whole pelvis gets collapsed, i.e. shows general centripetal falling in.
In basin, all diameters are diminished, ~~& conjugate least~~.
Are 2 terms applied to this conjugate, i.e. vertical & available. Vertical is increased, but part projects beyond the narrowed apex of the pelvic inlet at the

brim & all behind this is the available diameter.
Brim is beak shaped & also triangular. It may also have secondary deformities.
In cavity, the transverse diameter is lessened & hollow of sacrum is deepened by tilting up of sacrum & outlet.
At outlet, all diameters are diminished, esp. the transverse, because tuber ischii converge & pubic arch is diminished, this pelvis being contrast of rickety pelvis at outlet.
In rickety pelvis, you can introduce the hand to perforate, while in osteomalacia you can't.
Treat the case according to the ~~cont~~ degree of deformity.

Disease of vertebrae & joints.
Chief one of vertebrae is one

Lecture 45.

Oblique Pelvis.

1. Scoliotic - Oblique.
2. Roberts - Double oblique.
3. Naegele's - Obliquely contr.

connected with scrofula or injury or birth. Intervertebral discs get diseased, & the joint between last lumbar vertebra & sacrum gives way so that the vertebra slips down in front of promontory. It is called "Spondylo-olisthetic Pelvis."
Interferes with labour at the brim by the displacement.

Oblique or Naegele's Pelvis is where one sacro-iliac joint is diseased. Symphysis pubis is brought over to sound side & affected side is diminished, pelvis becoming obliquely ovate.
Forceps or fist on forceps, & fetal occiput down through the biggest side.
Is often associated with lateral curvature of the

II. FAULTS ON PART OF PASSENGER.

1. Preternatural toughness of membranes.
2. Premature rupture of membranes.
3. Absence of bag of waters.
4. Hydramnios.

   Specially its diagnosis and dangers.

5. Defective amount of liquor amnii.
6. Sex of child.
7. Shortness of umbilical cord.

   1. Absolute. 2. ~~Real.~~ Relative.

8. Large size of child.
9. Hydrocephalus.
10. Malposition of head.
11. Face cases.

spine, & shortening of one leg, latter being secondary to the deformity of the pelvis.

Spinous Pelvis is very rare. Along brim of pelvis small exostoses may occur, but they don't interfere with labour except in lacerating uterus & setting up peritonitis.

Large Exostoses may occur on sacrum, preventing descent of head. Amount of obstruction varies.

Disease of Hip-joint deforms pelvis as does also cancerous disease of pelvic bones.

Faults on Part of Passenger.
1. Preternatural Toughness of Membranes.
Membranes usually break, but may need to be ruptured. The

tendency is to rupture them too early, so you must be careful.

II. Premature Rupture of Membranes. Membranes may rupture early, when fluid wedge is absent & so dilatation is slow.

Causes.

1. Weakness.
2. Accident.
3. Frequent & careless examination.
4. Malpresentation.
5. Deformed pelvis.
6. Malposition.

When they rupture early, examine at once for presentation.

Guard against early rupture in 1st: pregnancy.

If they do rupture early, you seldom need to interfere, but dilatation of cervix by finger may be necessary. Keep parts moist by oil, vaseline etc:

III. Absence of Bag of Waters.

IV. Hydramnios is said to be result of inflam. of amnion, diseased decidua, large placenta or disease of the mother. It occurs early in pregnancy when twins are usually present. Early here means between 3rd. & 5th. month. Uterus gets thin resembles a parovarian, & may be size of 6th month pregnancy. Abortion usually occurs at 4th. month. Usually it is the 1st. child that is affected.

Also occurs later in pregnancy, when it is often associated with deformity of foetus, but it may occur without any other abnormal condition.

Diagnosis is difficult. It may be mistaken for ascites or twins.

In ascites, fluid is superficial & free, outline of uterus can't be felt, ~~the~~ other parts of body are dropsical. It can't be diagnosed from tumor, as it usually occurs with them.

In early preg., no treatment is required. In ~~the second~~ late preg., it overdistends lower uterine segment & so delays 1st stage of labour.

Usually have profuse post-partum haemorrhage with hydramnios.

Secretion can't be diminished, but if it causes great inconvenience to patient draw some off by an aspirating needle introduced p.v. through the lower uterine segment.

If it delays labour,

rupture the membranes.
Are 2 conditions in which uterus is distended out of all proportion to period missed, eg. hydramnios & hydatids.

V. Defective amount of Liquor Amnii.

VI. Sex of Child.

1. Male causes more trouble than female does. Head is larger by thickness of tablo nasphia.
2. Of mothers dying in parturition sits inclined, consequence, greatest proportion have been male children.
3. Among labours presenting morbid complications, difficulties, child is usually male.
4. More still-born males than females born.
5. Of children that die dur-

ning parturition, there are more males than females.

6. Males suffer more than females from morbid state injuries from parturition.

7. More males than females die in earliest periods of infancy, & the disproportion between mortality of the two sexes gradually diminishes from birth onwards to some time subsequent to it.

VII. Shortness of Cord. Absolutely short cords are very rare, but relatively short ones are common, i.e. where it is twisted around the child's body. If around neck, pull it over the head.

VIII. Large Size of Child is a distinct obstacle to labour, but can be overcome by forceps.

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You may meet with large child with partially ossified cranial bones, when the latter won't overlap, & forceps should be applied.
IX. Hydrocephalus may occur to such an extent in utero as to render labour dangerous or impossible. Head may be enormous.
Presentation by breech is commonest, but it may be by head or foot. If they present by head, labour will be obstructed without apparent cause. Give chloroform & introduce your hand to explore.
If presents by breech, head will be obstructed without cause, high up & hard to get at. Head is large, flat, bones are loose, & sutures & fontanelles are widely open. Head may be felt through-

usually, but is soft.
When it is a breech case & head sticks at brim, child is very small & shrivelled, & head may be felt to be large & flat supra-pubically.
Is there any risk to the mother in a hydrocephalic labour? Yes; rupture of uterus is apt to occur, the lower uterine segment dilating. Of 74 cases, collected by Keith, 16 died. The head is too large to dilate the os, but thins out the segment, until it becomes quite thin & rupture takes place.
Once, diagnosed, regard the labour as serious.
Never put on forceps, as they increase the chances of rupture. Diminish the bulk of the head without

delay by any means, eg, aspirate, use knife, scissors etc: Head may need to be broken down. After, you have tapped, the risk ceases as a rule & you may then pull on forceps.
If breech presents, you may pull child to one side & tap behind the ear, or through roof of mouth, or spinal column.
Difference between delivering large head & hydrocephalic one is that in case of large head you have to use craniotomy etc: while with hydrocephalic head tapping is indicated.
Body may be enlarged by putrefaction of child, tympanites, ascites of child, child's distended bladder, all need puncture to be emptied.

X. Malpositions of Head.
(Occipito-posts: see ante.)

Forehead alone may present in any position common to vertex. May be recognized by flatted shape of forehead & presence of ant. fontanelle. Treatment is time, patience & timely use of forceps. Ear may present when child is small & pelvis large, but this is rare. Rectify position by finger or hands.

Child may present hand in front of the head, when you must push hand up & deliver with forceps.

XI. Face Cases

There are malpresentations, but not malpositions of the head. More men have been plunged by these than any other condition.

Ought to be called "face-presentations".
They only occur ~~in~~ once in about 230, but in Germany it is 1 in 160. Are just as common in primipara as multipara.
A face presentation is where the face comes down instead of the vertex.
Initiatory movement which produces this is extension.
Obstetrical face includes the forehead; while the anatomical face does not.
Long diameter of face corresponds to occipito-frontal extends from tip of chin to forehead.
Transverse = bi-parietal runs from one malar bone to the other.
Denominator is the chin in face cases.
Are 2 kinds, primary or

Lecture 47.

where face presents before labour sets in, or secondary, where face presents after labour begins is more common than the primary. Primary face cases are usually due to goitre etc, or may rarely be due to spasm of muscles of back of neck.

Secondary cases are caused by sciatic hitching on the brim, face replacing the vertex. Hydramnios may cause this as also obliquity of uterus, it then acting on one side more than the other. Narrow pelves produce face presentations often, each adds to the difficulty of the other. Dolicho-cephalic foetuses have heads elongated antero-posteriorly, & cause face presentations. Other causes are prolapse

of arm under chin, twins, etc:

Before membranes rupture, diagnosis is difficult. In trying to make out a presentation high up, don't finger about too much, as the membranes must not be ruptured, if possible. Main diagnostic marks are edges of orbits, nose & orifices of nostrils. By noticing direction of the nostrils, you can tell the presentation, i.e. position of chin. Cavity of mouth & alveolar ridges will help you still further. Features are somewhat destroyed, if the case has gone on long, as cheeks get swollen & pressed together etc., but you can tell presentation on introducing hand into

FACE PRESENTATIONS

I.

Commonest.

RIGHT MENTO-POSTERIOR—R.M.P.

FACE PRESENTATIONS

II.

LEFT MENTO-POSTERIOR — L.M.P.

the vagina. Examine carefully to avoid injuring the child.

Positions.

Are 4 of face as of vertex, & denominator is the chin.
Are 2 mento-anterior & two " -posterior ~~cases~~ presentations.
Are numbered differently from vertex cases, as they usually are secondary to the vertex cases.
R. Ant. P. is the commonest.
L. Ant. P. second.
L. Ant. A. third.
R. Ant. A. fourth in frequency.

Mechanism in R. Ant. P.

1. Extension is the first movement. Face's long diameter lies in r. oblique of brain, & bi-malar in left oblique. Descent goes on all through the movements, but slowly. Chin corresponds to sciatic

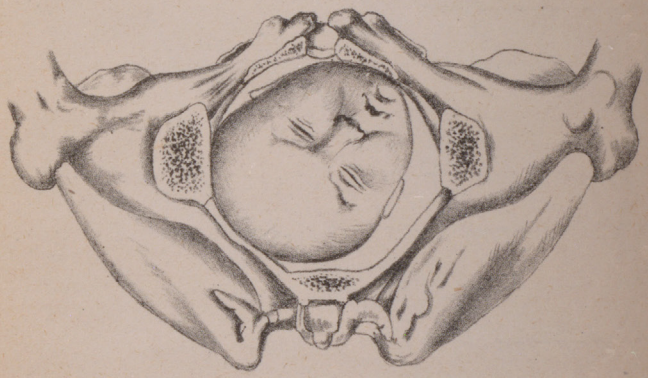
N.B. Denominator always is lowest & goes forward.

in vertex case, ~~vis~~ is in
advance of the load

Nb. Mentum always is lowest & goes forward.

FACE PRESENTATIONS

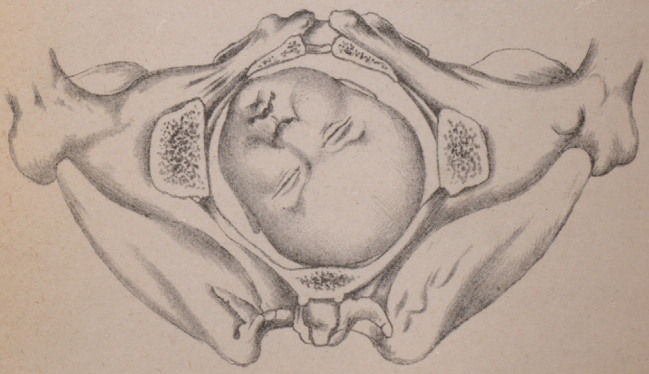
III.



LEFT MENTO-ANTERIOR — L.M.A

FACE PRESENTATIONS

IV.



RIGHT MENTO-ANTERIOR — R.M.A

in vertex cases, ~~also~~ is in advance of the forehead. Extension & descent are slower than flexion & descent in vertex cases. Longer descent takes place, the greater is extension.

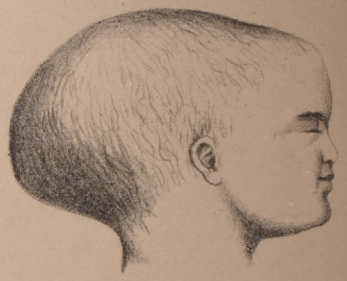
2. Internal Rotation is the going forward of chin under the arch of the pubes. If the chin goes back by any chance, you have the most difficult case to treat. Its sphere is unknown, but it occurs higher up in face cases than in vertex cases, as the neck won't allow the head to come down far enough.

3. Flexion is ~~the rolling of~~ where the forehead, occiput etc. roll over perineum & are brought chin being caught at the arch of pubes.

4. External Rotation is the

HEAD MOULDING
III

PERSISTENT OCCIPITO-POSTERIOR



BROW

HEAD MOULDING
IV

FACE

FACE
(SHEWING RELATION OF HEAD TO BODY)

same as in vertex cases.
Is there no Solayage or Roederer's obliquity? The first one does exist, but the occipito-frontal is represented by the ~~the~~ fronto-mental ~~the~~ obliquity. ~~that~~

Is there a caput succedaneum in face cases? Yes, it occurs on malar bone. When born, child's head is very disfigured. Cheek is blackened, eyes swollen & protruding.

Prognosis is serious ~~to the~~ child & sometimes ~~to the~~ mother. 13 % of children die, & 3 % of the mothers, but if there be ~~the~~ least abnormality, the mortality is increased tenfold.

Why are face cases slow & troublesome?

1. Face dilates ~~cervix~~ slower than vertex, fitting into

Lecture 48.

the pelvis badly.
2. Face doesn't lend itself to moulding.
3. Force pressing through the spine acts at a disadvantage.
4. Flexion doesn't reduce the diameter of head in face cases, as it does in vertex presentations.

Treatment.

If you see it before membranes have ruptured, turn & deliver by feet. You may convert a face case into a vertex case if you are skillful enough. Face cases are bad forceps cases, as face comes down awkwardly, & you lacerate the mother very often as the traction has to be powerful. You must use the forceps in many cases. If all these fail, operate on mother or child.

Many face cases end spontaneously, but Crosse doesn't believe in this in normal sized pelvis & head.

It is wrong to allow a face case to remain in pelvis after membranes have ruptured, so ~~that~~ put on forceps early.

Mento-posterior (persistent) cases are about irremediable, so treat each case on ~~its~~ its own ~~mer~~ merits, using forceps, craniotomy etc.

Instrumental Labours.

1. Use of Fingers.

When head is well down, you may expedite labour by introducing finger into the rectum & pushing head down.

2. Hillet. } Unused now.
3. Lever. }
4. Forceps.

These were introduced by

~~the~~ Chamberlains, who kept them secret for 60 years. Have been in use now for about two centuries, but are now greatly modified. Smelley first gave them a curve. ("pelvic curve.")

No midwife dies happy until he has attached his name to a forceps.

You should select a pair of forceps & stick to them. ~~Tarnier's axis traction forceps~~ Simpson's modified forceps (i.e. axis-traction) is ~~the~~ best kind.

Consists of two fenestrated blades. Holes are to diminish weight & to adapt themselves to head. Blades have one curve ("cephalic") = childs head, & another curve ("pelvic") = curve of Carus.

Blades are connected by Smelley's lock, which characterizes English forceps.

Shanks give length to the instrument.

Axis-traction rods were invented by Farnier & adapted to Simpson's forceps by the Professor Simpson. The rods are merely to pull by, the handles only indicating the direction you ought to pull in.

A screw fastens handles together.

Mode of Action of Forceps.

a. Traction.

b. Lateral lever motion, from handle to handle is very slight.

c. Compression of head, equitation taking place, 1/2 in. or more being gained, but the compression must never be continuous. You should not tie the handles together or keep them screwed up, only doing latter during

Lecture 49.

traction. Safest direction for compression is bi-parietally.

d. Hydrostatical action is their presence in vagina acting as foreign body stimulating the uterus.

e. Change of position is not to be tried by forceps, according to Crosse, but other teachers recommend it. Position of occipito- or mento-posterior may be changed.

Are 2 great varieties of forceps, i.e. long & short, for high & low operations, but the one instrument suffices for both operations.

Of the place of application is at or above the brim, the operation is high, all below this is low.

What are necessary conditions for use of the forceps?

Indications for Forceps.

I. Faults of Powers: eg: Uterine inertia. Indirected force.

II. " " Passages. (Soft & Hard.) eg: Rigid Vagina or Perineum. Juxta-Minor Pelvis.

III. " " Passenger. eg. Large arrested head. Malposition, as occiputo-post.

IV. Complications.

A. Maternal. eg: Convulsions, haemorrhage, rupture.

B. Foetal. eg. Prolapse of cord.

1. Be sure that there is some reason.
2. Membranes are ruptured.
3. Cervix fairly well dilated.
4. Rectum & bladder are empty.
5. Patient in convenient position.

How will you place your patient for forceps?

Anaesthetize the patient to full extent, as genital tract is the last part to come under influence of the anaesthetic.

Bring patient's buttocks to the edge of the bed, patient lying on her left side.

Bend legs well up. Let the nurse to support the buttocks with her knee, use her left hand for the chloroform & right hand to help you.

Make an examination now, to notice which kind, arrangement of pelvis, position of head & dilatability of the

cervix.
You should always tell the husband at least or whoever is responsible. You will be asked if the operation is safe, but you must say that there is always a certain amount of danger but the risk is at a minimum.
When anyone gives you the forceps take them by the handle, lock them outside patient & place them in position behind her. Then take the upper handle with lower blade. Slip the blade in carbolic oil. Syringe vagina with antiseptic first. Cover left hand with carbolic oil & introduce it into vagina, so that you touch foetal head, taking great care not to include the cervix. Pick up the instrument by

the shank lightly in the fingers. Place it across patient's thigh & follow the fingers closely. After it gets to head, it slips into position itself, if all goes on well. This must be held quite steadily by assistant or nurse, making him draw it well back to perineum. Next pass left hand to head on the other side. Introduce the blade along hand as before. If there is any trouble in locking, withdraw the last blade & re-introduce it.

Traction must only be made during the pains & stopped between them. Time & imitation of nature are the best use of forceps. Best cases are where you use forceps, as you save the

Lecture 50.

patient exhaustion, pain etc: Never let woman be in 2nd. stage of labour more than 3 or 4 hours, & if all is not over then, put on forceps.

Crom uses forceps once in 3 labours, she has had no bad result for five years. Former bad results were due to waiting, mechanism of labour was not known & people didn't know how to use the instrument. There must be no jerking in traction, & if there is any difficulty in starting the head, try the lateral lever movement.

The forceps are slipping, if you see the fenestra coming down without the head, & the latter may be helpd right by feeling it with fingers of the other hand.

In exerting traction, you are to remember that the head has to make certain movements, but never try to assist rotation etc, If the latter fail forceps in awkward position, take them off reapply them. When you apply forceps to the head in the pelvis, you apply them laterally to head, i.e. biparietally.

After you have brought down head to the perineum, you stop see if fast; fontanelle is in centre of vulva in an L. O. A. If so, press the handles forward, when the head will be born. Then remove the forceps, taking away lower blade first.

Above takes place in

low cases, but not in the upperones.
In high cases the forceps are put on at or near the brim to any part of the child's head wherevyou can get most room. Here application & locking of the forceps are the same as low down, but the difficulty is greatest.
Anaesthetize the patient & introduce the whole hand (carbolized) well into the vagina. Extraction is the same as in low cases, except that at the brim there is difficulty in extracting in the axis of the brim. To deliver patient from the brim, the head is to pull in the axis of the brim, but the perineum (if intact) is in the way. This is overcome to

a certain extent by the axis-traction forceps. After putting them on, simply pull by the handles. If a small amount of force with these won't pull head down, then nothing will, so you had better desist, & operate on the child, perforating etc. its head.

How long should it take to pull head from brim to vulva? The time varies with the condition of the mother & child. If delay be due to narrow brim, Cesarean takes 1/2 hour to do this, but no convulsions etc. do it as rapidly as possible.

Dangers to mother are tearing soft parts.

Turning or Version.

Is an operation by which

position of child is changed, replacing vertex by foot or breech.
Its object is to convert a case in which fœtus can't be extracted into one in which it can be, or difficult into easy cases.
Are various kinds.
1. Cephalic Version.
2. Podalic Version.
3. Bi-polar Podalic Version.
1. Cephalic version is unimportant & not to be bothered about.
2. Podalic Version is introducing the hand into the uterus & replacing the head by breech or foot.
It is indicated in
4. Shoulder Cases.
b. Flat Pelvis.
c. Prolapsus Funis.
d. Haemorrhage.
e. Convulsions.

Lecture 07.

f. Certain cases of uterine rupture.

For turning place patient in the ordinary obstetrical position & right leg held up by a nurse. Patient must be fully anaesthetized, so as to have uterus perfectly quiet. Version itself is very simple, but the difficult cases are when the membranes are ruptured & waters escaped.

Operate ~~just~~ before or just after membranes have ruptured & waters escaped. Also see that cervix is either fully dilated or easily dilatable. If you have to operate before cervix is dilated naturally, dilate with Barnes bags etc. In all right positions turn with right hand & in left case with

×Ruptured membranes at or near the os.

the left, ~~as~~ in these cases, the hand goes to the abdomen easiest.
Always tell patient & her friends that you have to aid the labour, but make no fuss about it.
Take off your coat & anoint the hand to be used with carbolic oil, not putting any in palm of the hand.
Inject warm carbolic into vagina.
Put hand into form of a cone, & introduce it into the vagina & cervix.* Put the hand along the abdominal surface of the child, so you must know position before you begin.
Only manipulate during the pains, keeping the hand pressed against the foetus during the pain.
After you pass the head,

you touch the knee or foot.
Seize the furthest away knee as a rule, but you may take a foot when the foetus's knees are not flexed. In rupture of uterus take both feet.
Make slight traction in a wavy manner, only pulling down one leg, as cervix is much more gradually dilated by one leg & it prevents cord from pressure.
When you have leg pulled down simply draw & make no attempts at rotation.
Make supra-pubic pressure at the same time, extract in axis of the pelvis. When breech is well down in cavity of pelvis pull down both legs. Now hook down a loop of the cord.
If you try to pull child

out by the legs, the arms are forced up beside the head.

Arms have to be liberated. Do so by turning child's body forward, putting up fingers behind child to its elbow, then push the arm over thorax for the sacral arm. Do the converse for the pubic arm, always pushing from behind.

Nature may complete delivery of breech & arms, but never that of the head. Hasten delivery by supra-pubic pressure & gentle traction by putting two fingers over the back of child's neck. Never rotate in extracting the head, as you would only twist the child's neck.

The difficult case to turn

Lecture 52.

in is where membranes are ruptured & waters escaped. Here, give a small dose of morphia hypodermically & then deep anaesthesia to relieve the pressure of uterus on the child.

Bi-polar Podalic Version.

Is not often employed, as it is more troublesome than the latter & no better. So called, because you operate on both poles of fœtus at same time. Actual turning can be performed without introducing the hand into the uterus.

One finger of left hand is introduced into cervix, & the right hand is placed over the fundus. Keep tipping head away from the

bring & push fundus over to the other side. After you get child in the transverse position, place the right hand under the head & press it upwards. After turned, pull down the one leg.

Induction of Premature Labour.

It lies midway between conservative & sacrificial labour, & must be considered before sacrificing the child or imperilling the mother.

Object is to induce contractions & deliver the mother. Mother may die from co-existing disease, which must be kept in mind, when considering her safety. The operation is to take the place of some other operation

ON THE ADVANTAGE OF

AXIS TRACTION-FORCEPS

IN THE LOW OPERATION.

Read in the Section of Obstetric Medicine, at the Annual Meeting of the British Medical Association.

By J. HALLIDAY CROOM, M.D., F.R.C.P.,

PHYSICIAN TO THE ROYAL MATERNITY HOSPITAL; PHYSICIAN FOR DISEASES OF WOMEN TO THE ROYAL INFIRMARY, EDINBURGH.

THE subject of axis traction-forceps, their modifications, advantages, &c., has certainly received recently a very large share of attention. This, in my opinion, is not less than is due. It is obvious that the main advantage of such forceps is to be found at the brim. A large amount of evidence, in carefully recorded cases, shows that an accurate adjustment of traction in the axis of the brim, has rendered delivery of a living fœtus possible when previously craniotomy or a dead fœtus were the only alternatives. Not only so, but in cases of flat pelvis, when version has hitherto been the recognised management, the axis traction-forceps have effected delivery satisfactorily, as in cases recorded by Barnes, Macdonald, and myself. This I conceive to be of much importance in cases of delivery in flat pelvis, because in many cases, before assistance is obtained, version is extremely difficult, if not impossible; and until the introduction of traction-forceps, there was no resource but embryulcia.

In the present communication I do not refer to the value of such forceps at the brim, but desire to emphasise their importance and advantage in the cavity and outlet. I wish to show that the low operation, or what is generally known as the short forceps operation, can be performed with greater advantage by axis traction-forceps than by any other of the known methods.

A short forceps case is one in which the head at its greatest diameter is within the brim, and where the os is fully dilated and the membranes ruptured. Delivery under such conditions may be required under varying conditions, which it is not necessary now to enumerate; but take for illustration two common causes of delay—one on the part of the child, for example, malposition of the head; and one on the part of the passages, for example, rigidity of soft parts at the outlet.

First, then, in occipito-posterior presentations, which form a very frequent source of delay in the cavity of the pelvis, axis traction-forceps offer a distinct advantage.

1. In those cases which are the most common, when the occiput rotates forward, they favour rotation, because, the blades being fixed on the head, and attached by the traction-rods to the handle by a swivel-joint, the forward rotation of the occiput during the process of traction is facilitated. To the practical obstetrician who has used these forceps in such cases, this advantage will be very apparent; for he will have observed that, in using the forceps in occipito-posterior presentations where rotation takes place, the blades will come to be with their pelvic concavity directed backwards instead of forwards, as they were when originally introduced. In such cases the forceps ought to be removed; and, of course, if the labour go on, well and good; if not, it will be necessary to reapply the forceps to extract the head over the perinæum.

2. In cases of persistent occipito-posterior presentations, the advantage to be gained by the use of these forceps will appear, if we consider the greater ease with which flexion is promoted at the very time at which flexion is most needed, namely, as the head is passing over the perinæum.

With the old instrument, it was necessary, in order to complete delivery in these cases, to change the grasp of the forceps from one of simple traction to the familiar method where the forceps handles were placed in the palm, and these propelled in front of the delivering hand. At this point arose a double difficulty: first that of preventing the blades from rotating on the head, and secondly, that of completing the "delivery in a circle." Both of those difficulties are obviated in the axis traction instrument, because, from the commencement, the blades are firmly fixed on the head by a screw; and the rods enable the accoucheur to regulate the movement in a circle to a nicety, the application handles playing the part of an indicator all through.

3. This instrument unquestionably saves the perinæum. This, I believe, is the general consensus of those who have been accustomed to use it. The reason why it does so has been so far indicated in the former two cases; but also in the case of rigid perinæum similar advantages may be obtained, because extension in such cases is more completely effected, it being possible to carry the handles so much better forward; and at the same time we obviate the risk of tearing the perinæum, as used frequently to happen with the old instrument, by the points of the blades rotating beyond the head.

If this advantage of axis traction-forceps at the brim be an admitted fact, and if I have shown that they are equally useful at the cavity and the outlet, then it must be apparent that the rods should always be permanently attached to the blades. Anything in the shape of removable rods is to be deprecated. The complete instrument ought to be used at the brim, through the cavity, and at the outlet.

In this, as in every other obstetric operation, a great deal depends on the instrument used. The instrument which I have always used, and which to me seems unquestionably the best, is Sir J. Y. Simpson's forceps, to which permanent traction-rods have been attached by Professor A. R. Simpson. What seemed to me the least satisfactory point in this instrument, namely, the want of a sufficiently rigid connection between the rods at the handle, has been obviated by my friend and former pupil, Dr Milne Murray.

later on, which will be more dangerous.

Child will suffer, but, if allowed to go to full term it must die, so need not be considered. It may live however, as did Christoll, Geo. III, Sir Isaac Newton etc.

Causes of danger to child are :-

1. Every child born prematurely is more likely to present abnormally than a full time one.
2. Miscalculation of term. The child must be fully seven months old to have much chance of living.
3. Rupture of membranes before the appointed time.

Indications for it.

1. Extreme contraction of bony pelvis or small parts.
2. eg. below 2 inches, pelvis.

ovarian tumour, irreducible displacements, contraction of the vagina.

2. Dangerous conditions of mother, eg. obstinate vomiting, albuminuria, cardiac disease.

3. Foetal affections, eg. recurrent hydrocephalus, placental disease, habitually large foetus.

Period of induction is at 7th month. Below 7th month, child will probably die, but may have to be delivered before then, on account of albuminuria etc. You are very apt to miscalculate, but take an average case. Be careful not to induce it before 7th month, & after that according to the indications for the operation.

Never induce premature labour without a consultation.

Methods are:-

1. Means to stimulate spinal cord, eg. ergot & quinine, latter being best, giving it in large doses.
2. Injections into rectum.
3. Irritation of breasts.
4. Kiwisch's Plan is often adopted in Germany, consists of injection of hot water in the vagina.
5. Cohen's Plan is injection of hot water into the uterus, but Lagarmitch's injection is up to fundus.
6. Injection of air into uterus.
7. Galvanism which is uncertain & unsafe.
8. Plug into cervix, as a tent or Barnes Bag, but this doesn't simulate natural.
9. Hamilton separated the membranes by introducing solid body into uterus.

10. Friction of fundus.
11. Premature membranes.
11. Vaginal dilatation.
12. Barnes method is the best to be adopted. This method is quite certain. Are two stages, provocative & accelerator. Go to patient at night & take a gum elastic bougie (not a catheter, as air may pass up & cause septicaemia). Introduce this between the membranes & uterine wall, being very careful not to rupture the membranes, pushing it in as far as possible. Leave it there all night & go home. Patient is easy through the night. In the morning, the pains start & by the afternoon, you will find labour advanced, & dilating the.

Lecture 53.

No more interference is often required, but in most cases you have to accelerate labour in some way. You have to dilate the cervix & Barnes' bag is very useful here. Rupture membranes & let labour proceed if normal, but if a shoulder presentation is felt, turn & deliver. Child is immature & must be very carefully treated. An incubator is useful. Be prepared for resuscitation.

Procure a wet-nurse. She must be a primipara, bet: 20 & 25, healthy & free from syphilitic taint, as should also her child, phthisis or struma. Nurse's child must be healthy also. Be careful that the child is her own. Woman must be free from any insanity. As puerperal mania develops

EMBRYULCIA.

Indications :—

1. Contraction of pelvis or soft parts—ranging from 3·25″ as a maximum to 1·5″ as a minimum.

2. Certain cases of obstruction due to child, such as some face cases, locked twins, double monsters.

3. Certain conditions in which safety of mother demands speedy delivery, such as hæmorrhage, exhaustion, convulsions, &c.

PERFORATION is the first step in all the operations.

Preparation.

Position.

Exploration—determine three points—

1. Sacral promontory.
2. Fœtal head.
3. Os uteri.

Point selected.

Method of operating.

If perforation insufficient, then further comminution is to be effected by :—

A. Craniotomy.

B. Cranioclasm.

C. Cephalotripsy.

D. Cephalotomy.

E. Basilysis.

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early so may be seen before the woman enters patients home. Woman must have plenty of good milk as shown by her own child being well nourished.

Embryulcia.

Includes all labours in which child is destroyed. Indications (see slip.) Don't delay the operation after you have decided upon its necessity. Woman runs more risk, if child dies in utero & you should extract it as soon as possible. Delay causes exhaustion & danger. You needn't wait for full dilatation of cervix, but perforate as soon as you get room to do so. Once the vault of head is broken, it can adapt itself much better to pelvic & this

may be all that is required.
First point is a selection of a perforator. A straight perforator is what you need, not a bent one. Never mind what the handle is like. A curved instrument is apt to slip off head & injure soft parts.
Empty bladder & catheterize the bladder. Get ready some antiseptic wash for vagina, & have a basin ready for the bones & debris. Introduce entire hand into the vagina & examine promptly fœtal head & os uteri.
Which point of fœtal head will you perforate? Perforate wherever you can, choosing a bone, if possible.
Head will not have entered the pelvic cavity, & is mobile, so that uterus must be pressed down through the abdomen by the assistant.

Introduce left hand into pelvis, touching head with pulp of the fingers. Then introduce the instrument along the fingers, protecting the point by index & middle fingers until you reach the head, when you pass it from finger to head, & keep it there. Press instrument into head by a rotatory boring motion until it gets up to hilt. Open the blades & close them. Turn at right angles & repeat it again, so as to make a crucial incision. Be sure & destroy the brain thoroughly.

This may suffice & enable head to be delivered with forceps, or head may need to be further bashed up.

1. Craniotomy is where the skull is picked off by craniotomy forceps, & pulling

Lecture 54.

child through by blunt hook or forceps around face.

2. Craniclasm is performed by craniclast which consists of fenestrated & solid blade. Introduce solid blade into skull, other blade outside the scalp. Press the blades together, which breaks up the skull. Seize child & drag it out by the forceps.

3. Cephalotripsy is performed by an instrument called a cephalotribe, which is a pair of solid forceps & are introduced in the same way as traction forceps. Handles are compressed & head so crushed. Base of skull is not fractured but merely turned to one side. Can pull child out by this instrument also.

4. Cephalotomy is never per-

Cæsarian Section and its Modification.

1. Ordinary Cæsarian section.
2. Porro's operation or Hysteroöphorectomy.
3. Porro-Müller operation.
4. Thomas' operation or Laparo-elytrotomy.

Steps of Porro's Operation.

1. Abdominal incision.
2. Laying open uterus.
3. Extracting child.
4. Drawing the emptied uterus out of the abdomen.
5. Transfixing and ligaturing uterus just below the o
   interum by a serre-noeud.
6. Amputating the uterus with ovaries and tubes just abov
   the serre-noeud.
7. Securing the stump outside the abdominal wound.
8. Abdominal wound closed.

Antiseptics to be carefully observed.

Advantages of this operation—

1. Security against hæmorrhage.
2. No uterine wound to heal.
3. Less risk of septicæmia.
4. Security against future pregnancy.

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formed, but is cutting off piece of skull with saw forceps or scraseur.

5. Basilysis is an operation by which you wish to loosen threads up base of the skull. You screw it through the vertex, pass on, screw it into the base & then open it out, thus fracturing the base. This is Simpson's own operation, is dangerous. Crum recommends craniotomy.

Caesarian Section
(Read up in book.)

Preternatural Presentations.
Are two: viz:-
1. Breech.
2. Transverse or Shoulder = "Cross".
Causes.
1. Dead Foetus.
2. Premature Labour.

3. Abnormal Pelvis.
4. Obliquity of Uterus.
5. Hydramnios.
6. Placenta Praevia.
7. Disease of Uterine Wall.
8. Malformation of Foetus.

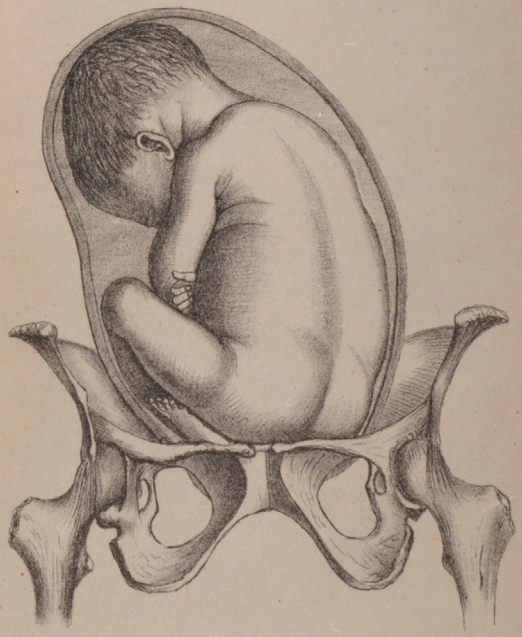
Breech Presentation.

This means presentation of pelvis, foot or knee. Occurs about once in 40 mature births or altogether 1 in 30.

How would you diagnose a breech case?

1. Palpate abdomen & head is felt high up near umbilicus. If primipara, you must remember that breech doesn't engage in pelvis.
2. Heart heard above umbilicus.
3. Bag of membranes present like finger of glove, ischial tuberosity, genitals, anus,

PELVIC PRESENTATION
A



BREECH PRESENTING, LEFT SACRO-ANTERIOR L.S.A.

coccyx.

4. Presence of meconium.

Are four positions viz,

Sacro-anterior. R. & L.

" - posterior. " " ".

Sacrum looks to foramen ovale etc. in diff. positions which are like the head positions

L. S. A. is commonest.

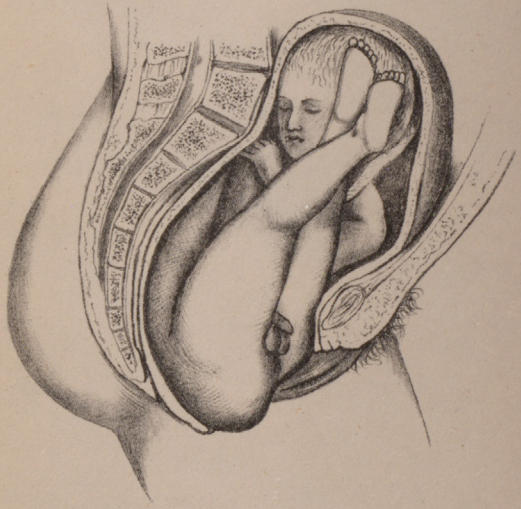
Mechanism

(1) Sacrum looks to l. foramen ovale, so back of child looks to left & front. Transv. diameter of ~~fo~~ breech lies in l. oblique, while cleft of nates lies in r. oblique. Left tuber ischii is lowest & touched by examining finger. This is "engagement of breech."

(2) Descent is next. Breech descends to floor in above position.

(3) Rotation now occurs. Left

PELVIC PRESENTATION
B



BIRTH OF BREECH

Lecture 55.

hip ~~tissue~~ to lie under the arch of pubes, sacrum going backwards.

(2) Expulsion is similar to extension in head case. Left hip gets caught under the pubic arch. ~~[illegible]~~ Right hip revolves over sacro-perineal concavity & is born. Left hip appears first, but right one is born first. Shoulders descend in left oblique.

Head enters in right oblique, descending to floor of pelvis this way. It then turns to curve of sacrum & occiput to pubes.

Caput succedaneum forms on left hip.

<u>Prognosis</u>. Maternal danger is not increased, but fœtal is greatly, viz: (1) head being largest compresses cord &, as there is no external res-

PELVIC PRESENTATION
C

BIRTH OF SHOULDERS.

piration, child cannot breathe & must die: (2) Placenta is apt to be pressed between the head & uterus, so that circulation is impeded & may even be stopped & so child dies being cut off from its blood supply. (3) Body & buttocks are exposed to the air, & its cold action on the skin causes the child to gasp, & to draw in mucus, meconium, liq. amnii or blood, & thus chokes. This still birth occurs oftenest in breech cases, as the three dangers are causes of it. Are other risks to the child: viz: arm over face & may be fractured, umbilical cord; thigh injured, etc.

Treatment consists in letting it alone in great majority of cases, although there is

PELVIC PRESENTATION
D

BIRTH OF HEAD.

a strong tendency to interfere & pull down the breech. If you do this you 1) materially interfere with the mechanism & 2) throw the arms above the head. Determine the nature of the case & leave it alone. Preserve the membranes as long as possible & do nothing until after the breech is born. After the breech is born, you may if you choose, bring down the legs. & also pull down a loop of the cord, & if it is not pulsating, hasten labour (if pulse is feeble or slow. Don't pull in order to help delivery, but put the hand over the uterus & push the child out. Arms usually come out all right, but, if not deliver them as after

turning.
If you want to hurry delivery (fœtus only lives 2 or 3 minutes, if cut off from the air & blood) do so by supra-pubic pressure. Never try to ~~turn~~ rotate the head.

Impacted Breech Cases.

Sometimes breech becomes impacted at the begin & will not engage. Then you had better convert it into a footing. To do this, you pull down one leg, some only or the cord will be interfered with. Aid by supra-pubic pressure. You may put a skein of worsted around the thigh but this is difficult to do, or you may use a blunt hook, which is apt to injure child. If you can't get breech to engage

break up the child, but Croom has never found this necessary. Forceps always slip off.

Transverse or Shoulder Cases.

These are also called "cross births".

Is much confusion here. Edinb. teaching is as follows.

A "shoulder case" is one in which shoulder, chest, or abdomen presents.

Causes are the same as those of breech presentations.

Are two classes:- viz:

1. Primary
2. Secondary.

1. Primitive are common but right themselves.

2. Secondary occur in early stages of labour & are not

Order of frequency

1. L. a. a.
2. R. a. P.
3. R. a. a.
4. L. a. P.

met with in practice. The least extra obliquity of the uterus will slide the head into illiac fossa & hence down goes the shoulder.

Frequency is 1 – 250 or 260.

Positions are named after the acromion process which is the denominator. Left & right refer to pelvis.

First two are always asked, & L. O. A. needs special attention. Here back is to front of mother, but if back of foetus is to back of mother, the position is R. O. P.

Diagnosis is not difficult during pregnancy, the child lying transversely with the head in one illiac fossa. During labour the presentation is usually so high that you can't reach it,

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in which case you should an-
aesthetize the patient & make
certain by putting your
whole hand into the vagina,
but be very careful not
to rupture the membranes.
Or dilate very slowly
& often painlessly. You
will be able to place
hand in, touch axilla &
feel the child's ribs, but
the head etc. can't be
felt. Parts are easily felt
after the membranes are
ruptured. When the hand
is presenting you may
tell position of back by
shaking hands with the
foetus.
If such a case is left
alone, the mother does not
necessarily die. The best
thing that can happen
is to have uterine inertia
set in, when uterus ceases

to contract, which gives time for skilled assistance to arrive. If labour proceeds, the child & placenta are both pressed upon & the child dies, all liq; amn; drains away, amnion bangs out & the woman dies from shock exhaustion, but the commonest result here is death of the woman by rupture of the uterus, just above the cervix. Spontaneous evolution is the normal result of a shoulder case. Delivery is most unlikely, but does occur. Three kinds of children may be the born, viz: (1) dead child occasionally, (2) premature child, (3) second of twins most likely. It is impossible with a living normal child at term. Never wait for spont. delivery. Spont.

version is not the same.
Mechanism. (1) Head is replaced by shoulders. (2) Shoulders get well pressed into pelvis, the membs rupture & the hand slips down. As shoulder presses further down, the head gets further away & the body shuttles past down. Sacrum, as usual is lowest & goes forwards i.e. shoulder goes forwards under arch of pubes remains fixed there = "int. rotation". Then uterine force acts on breech & the head gets to lie over the sym. pubis. Then the back, head & legs are evolved out of the pelvis & the head is born.
Treatment, is to turn & deliver. Great thing is to recognise the case early, as danger increases with every ½ hour. The case

requires judgement, tact & operative skill. Preserve the integrity of membranes as long as possible, & always operate before the rupture, if you have a chance, but if not do so as soon after as possible. Podalic version is the operation. Never touch projecting hand. Touch is very difficult to treat, as uterus is now firmly moulded around the child. Give big dose of morphia, then place patient deeply under chloroform & endeavour to introduce the hand & turn, which is very difficult & often impossible. If you fail, try decapitation or spondylotomy.

To decapitate, you take hold of the hand & pull the head as near brim as possible. Then introduce

a pair of forceps & cut off the head. (Beaumis decapitation). Then extract body by the arm & leave head in. Best now seize head with forceps or anything else & extract it. If you don't want to do this, then try spondylotomy:= breaking through spinal column.

Complex Labours.

These are not always those which are delayed, but may be rapid. Or one complicated with something outside of passages together with something in patient's economy.

A. Complications on part of the mother.

1. Uterine Haemorrhage.

Are 3 varieties.

a. Placenta Praevia is much mixed up with accidental

Lect. 37.

in students' minds. It is a condition where the placenta presents, instead of being in normal position. It is thus situated on part of uterus that expands instead of on part which contracts, which is the normal condition. Hence unavoidable haemorrhage is the result.

Occurs about 1-573.

Are varieties. eg. marginal, just at edge: Partial when overhanging os: & Complete, when covering the os.

If lies in uterus & not in the cervix.

Causes. Croom prefers this. More frequent in multiparae. Usually occurs in women who have had ~~many~~ abortions, or some abnormality, ~~fibroids~~

uterus here being large.
If the uterus is large, it will be inclined forwards or backwards. If uterus is so inclined, mucous membr, will much less in large than small uterus so ovum will roll down until it is caught near cervix = gravitation of impregnated ovum.

Symptoms are only one, viz, haemorrhage, usually in last 3rd ths, of preg, but may occur earlier, then signifying an abortion. May occur in one great gush or repeated flows. Nearer full term the greater is the flow. A woman goes to bed quite well in middle of the night membranes appear to rupture, but

it is really blood. It comes on carelessly, is generally very profuse, but may be slight. On p. v., if os is open you can detect the placenta, & also if closed ∴ (say it is marginal) the lower uterine segment feels baggy, as if there was something between uterus & head, i. e. a mass feeling ~~as with~~ large vessels standing out & pulsating in lower uterine segment.

Diagnosis is not difficult. Generally the woman has a long history of abortions, diseased placentae, dead children & plac: previa. Don't mistake placenta for clot, as latter can be broken up by fingers.

Termination ~~differs with~~ treatment. If left alone, death is usual result, due

to haemorrhage. (2) Child may pass along the edge & be delivered spontaneously, but this is uncommon.
(3) Placenta may be pushed through cervix & child may follow. (4) Child may be forced right through placenta.
(5) Placenta expelled & child left.

Sources of Haemorrhage.
(Pathology.) (1). A gush from placental cells or blood spaces; as lower uterine segment expands it tears itself from placenta & hence the spaces are opened & the blood escapes.
(2) Haemorrhage (slight) from separated placenta, a little only as the moment the haemorrhage ceases, the spaces fill with coagula or collapse, but this may not occur, so bleeding may

go on.
(3). Sinus of Breckel may be opened into but this is not a continuous one & so the haemorrhage is slight.
(4.) From the uterine vessels there is a continuous flow of blood.
Mortality to child is very high, :: (1) child often immature; (2) position abnormal & presentation is shoulder. (This latter is due to placenta causing obliquity of uterine surface, so the shoulder presents). (3) various accidents during delivery, eg: neck caught by rigid cervix, pressure on cord & also haemorrhage.
Risk to mother is that of haemorrhage & delivery.
Treatment. As soon as though ~~there~~ sure case was dangerous & evacuate uterus

as quickly as possible.
If in early preg: (i.e. up to 7th month) put it off by recumbent posture, quiet, lead & opium & cool drinks, but latter are not much good.
After 7th month, don't try to prolong pregnancy at all.
Puncture the membranes, when bleeding vessels get compressed & uterine contractions aided. If only marginal & labour goes on all will go well, but it is usually better to interfere. Turning is usually best method of interfering, but forceps are sometimes useful.
The os is slightly open but always soft so that the hand can easily be introduced & turning is

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easily accomplished, hence the woman usually dies of post-partum haemorrhage, also you probably have a torn cervix & haemorrhage from that. Pull down one leg into os, when you are safe, as this acts as a plug, & dilates the os slowly. Leave child thus & deliver the woman, after she has recovered from the haemorr. Give her stimulants, nourishment etc.

If os is very small then plug the vagina firmly & carefully, leaving plug in for 4 or 5 hours, so as to allow patient to recover & to get time to procure "Barnes' bag" etc. On removing plug, cervix will be partially dilated as plug aids this.

b. Accidental Haemorrhage.
is where placenta is situated normally, haemorrs coming from it. Called accidental :: there is nothing in the parts to make it unavoidable.
Are 2 varieties, (1) where it appears externally; & (2) where it does not do so a big clot forms setting up labour if between placenta & wall, or else from edge of placenta into uterine cavity, bulging uterus & perhaps causing its rupture.
Causes Normally occurs in those exhausted & worn out, those enfeebled by disease such as albuminuria & anaemia, in women lifting heavy weights, falling etc: or when attachment is sepa-

ratted in women so predisposed & lastly in cases of endometritis where vessels are brittle & mere strain of labour separate placenta too far too early.

Symptoms & Diagnosis. You have escape of blood fr. vagina, usually acute pain in the side at point where separation is occurring. Escape of blood is bet. pains, & these may be all. Very often you have collapse, the uterus becoming irreg: in shape & often distended. On p. v. it may be distinguished from plac. praevia by your not feeling placenta or roughness feeling.

Prognosis. Never rest happy in yr. own mind until the woman is delivered, but don't hurry it. If

at 7th month, tell friends to send for you at once if bleeding begins again. Women of this type are usually debilitated & little haemorrhage is bad. Ant. form is by far the worst.

Treatment. If very slight & not near full term, tamponade by all means, e.g. rest, lead & opium, purge etc. If near labour & profuse, then puncture the membranes. When head comes down & plugs or labour is set up, & if uterus is overdistended, you relieve tension. Having done latter, put on binder & deliver with forceps or by turning. If is dilatation very slow, use Barnes' bag. After child is born examine the

placenta carefully & take every precaution against p: p: haemorrhage.

c. Post partum Haemorrhage.
Never attend a case unless you are competent to combat this. It is one of the most serious complications, as you have no time to send for help, & patient may die in 1/4 hour. If woman is properly delivered you seldom see it. It is most common in higher ranks of life.

Nature's two remedies are the uterine contractions & closing the cut ends of vessels by thrombi.
Causes are (1) inefficient action of uterus, i.e. "uterine inertia" a main cause.
A woman will bleed

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when there is uterine inertia in second stage or there is too rapid artificial delivery. Ymins & hydramnios found to liability to it, as in former there is large placenta surface in latter is overdistension. (2) In cases of gen. debility, feeble developement of the muscles, multiparae etc, comes from various places. Symptom is only one, viz: haemorhage, which may come on with such just after placenta or day grad. oozing. If uterus is well under control & general economy is not affected, then it is not p. p. haemorhage. If you have cold extremities, cold sweat, pallor etc. In most hopeless case,

you often get complete cure.

Means of prevention. As far as Croom knows it occurs just after delivery. If you press chloroform in labour, you are apt to have shaft but not p: p: haemorrhage, so be careful to follow descending body of child with left hand over the uterus (a nurse can tie the cord.) & keep left hand there until placenta is expelled if possible. If you are careful to deliver placenta by Crede's method, p: p: haem: seldom follows. Cases where it occurs are where child is early born & the physician is not attending to his duty.

Treatment. Croom's sheet-

anchor is superfluous pressure. Proceed with this at once & knead & press till you get uterine outline hard. If this don't answer (don't do more unless necessary), introduce fingers or hand into the vagina & clear away clots & compress uterus uterus bimanually. If this fails inject water at 120° Fahr. into uterus. Higginson's syringe carries it up to fundus uteri. It can do no harm & there is no fear of sepsis, as water at 120° F. is aseptic. As time goes on give ergot freely, hypodermic of ether, & whiskey by the mouth (too much of latter does more harm than good). Keep your wits about you & stick to

the woman. Application of cold has been recommended, but it is not much good.

Never plug vagina unless rent in cervix is very slight. You can compress the abdominal aorta if patient is very thin.

Injection of styptics has been recommended, eg. Fe_2Cl_6, iodine, vinegar, but hot water is as good.

As last resort you may try transfusion or anti-transfusion. In latter, you bandage arms etc., this is often good in slow haemorrhage.

In cases where cervix is slightly torn plug vagina, or better apply pressure to cervix, or it is best to pull down the

cervix repair injury at once.

Where you have extensive haemorrhage occurs during delivery of head, but is more marked after delivery. Treatment is only practicable after delivery, when you should apply pressure.

(d) Secondary Haemorrhage.

Occurs some days after delivery. You must distinguish it from ord: lochia or return ~~of~~ menstruation during the early weeks.

Causes. 1. Retained clot. 2. Retained parts of the placenta. 3. Fibroids. 4. Retroflexion. 5. Slow imperfect involution.

Treatment mainly consists in ascertaining cause & removing it if possible.

Is no great difficulty in introducing well carbolized fingers or even whole hand into uterus under chloroform 10 days after delivery & thus remove the cause. Give ergot freely. Hot H_2O into vagina is often sufficient. Complete rest. If os is firmly closed you must dilate it.

Rupture of Uterus.

This has been much changed in explanation in last few years. Is very rare.

May occur during preg. or parturition, latter is usual form.

Causes. Are 3 typical ones, viz: (1) Flat pelvis, (2) shoulder case, & (3), Hydrocephalus. You would

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expect it here, if woman is left to herself. Also seen in bad midwifery accidents, cancer of cervix etc.
First step is slow dilatation of cervix, which gets thinned out to a parchment-like surface. Rupture occurs at junction of body & cervix. = "Bandel's Ring".
Are no premonitory symptoms but 3 well marked signs, viz: (1) thinning of cervix all over head. (2) Bandel's ring felt by hand over them (3.) over abdomen you feel the firm hard round ligaments standing out, rupture is then imminent.
Symptoms that rupt has occurred are (1) labour suddenly stops woman

is comfortable, (2) presenting part has receded, on f. v. (3) hand covered with blood when you withdraw it, (4) collapse, haemorrhage etc, & patient will quickly succumb unless treated.

Treatment. First see if you can diagnose child through vag. canal. If head or presenting part is within reach you may put on forceps or turn & deliver. In turning, seize both legs, otherwise one will go through the rent in the uterus. If in a flat pelvis & you can't turn or put on forceps, crush the child by any means in your power & get it out before the rent becomes bigger & child escapes into the abdomen.

If hydrocephalic, puncture & break up.

Be sure & anaesthetise before operating.

After you have delivered the child, extract placenta by the hand, being sure that a loop of intestine has not got into the rent.

Successful treatment of such consists in antiseptic washing of the uterus & draining. If the wash gets into abdomen no harm is done. After washing out uterus keep patient on opium for days & the uterus well contracted.

If child gets into abd. cavity perform abdom. section & get it out, & do the same if child is 1/2 in abd. cavity & 1/2 in uterus.

Convulsions or Eclampsia.
may occur before, during or after labour.
Occur once in 350 labours.
Premonitary symptoms are
(1) Oedaema of face & hands
(2). Primipara.
(3). Urine albuminous.
Rarely occur in multiparae.
You suspect that they are just going to occur, if there is ringing in ears, intense headache, oedaema of hands, & face, vulva etc), & urine very albuminous.
If these are not treated, the fit comes on.
Patient suddenly stops talking, stares fixedly, becomes preoccupied & then recovers. Sometimes she gets blanched & faints, then recovering. Eyes may get fixed, mouth slightly

twisted to one side, teeth set, & a little foam at the mouth, patient then getting all right. Next comes a violent convulsion, rigidity, foams at mouth, face darkly flushed, opisthotonos, tongue protruded & perhaps bitten & then she becomes quite unconscious of anything. Pulse is full & strong but just at height of fit becomes very feeble. Convulsion may last two or three minutes & then pass off. Patient is now quite exhausted, has headache & thirst, or after exhaustion remains comatose or else becomes quite sharp & intelligent, which is best. Rarely die in fit & only at early part of it, when

℞. (Crosm.)

Gr. Ferri. Iodid: ʒ iij.

Sp. Æther. Sulph: ℥ss.

Liq. Ammon. Acet: ℥j.

Aqua Camph: ad ℥ vj.

Sig. ℥ss. as required.

J. H. C.

respiration is impeded.
Sometimes very first fit kills, or they may occur with great rapidity & the wear patient out.
In giving prognosis, note length of time between the fits, & the longer between them the better is the prognosis.
Cause is not certain, but they occur more with twins than with single children.
Probably due to pressure of uterus on renal vessel causing albuminuria etc.
If they occur in multip: which they do sometimes, she had chronic "Bright".
Prevent: Treatment. with diet is the treatment & give no food except milk. Give diuretics & saline purgatives to flush out the kidneys.

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When fits come on prevent her injuring herself. Get bowels to act at once by croton oil (1-1½ m on lump sugar), & you have a motion in fr. 25-30 min. Give lots of chloroform as it will stop any fit. Next get kidneys to act without delay, but she can't swallow;∴ apply large poultice, containing mustard, to the loins, or, better still, spongio-piline soaked with an infusion of digitalis. Next get skin to act. (1) Put her into a vapour bath best made with 6 hot water bottles. (2) Better still 1/6-1/3 gr. of pilocarpin hypodermically (not if is lung affection). If she recovers consciousness bef. the fits, keep up the

sedative action by chloral & KBr. (20 grs of former & 30 of latter) at short intervals. If coma is deep & the face is deeply congested, bleeding is useful.

Obstetric Treatment is a disputed point, but J. H. C. thinks following is best.

(1). If woman is pregnant, but not parturient, leave her alone, as uterine pains increase the convulsions.

(2). If preg, but not parturient ~~& pains~~ fits continue induce labour, but in most cases it goes on spontaneously.

(3). If preg & parturient deliver without delay, & keep bowels skin & kidneys acting freely. Give milk diet, wine etc. She will never have convulsions again unless she has chr. "Bright's".

Twins.

Occur once in 80. Most common in Dublin.

Causes are four, viz:

(1) Bicornuate uterus (rare)

(2). Rupture of 2 Graaf's follicles & both ovules impregnated.

(3) Abnormality in construction of Gr's follicles, each containing two ovules & each ovule

(4). Two germinal vesicles in one ovule & both impregnated; here twins are usually of the same sex.

Properly speaking, each foetus should have its own membranes, but usually these bet. the two disappear.

There may be one double or two single placentae.

When 2 Gr's follicles rupture, each child has its

own amnion, chorion & placenta, but when ~~ovules~~ come from the same follicle, or if there are 2 germ vesicles in one ovule, they have a single amnion, chorion & placenta & are of the same sex.

Diagnosis is difficult before 1st. child is born. Abdomen is not necessarily larger, nor are subjective symptoms more marked. The stethoscope & palpation are sweet. You may find two foetal hearts, shown by two beats of great intensity of sound. Palpation may discover two heads, but this is difficult. Never give an opinion. You should always diagnose twins after the first is born.

Presentations. Normal is

~~two~~ heads; next head & breech, & finally breech & head.

Prognosis. Twins are a decided retrogression & signs of degeneration. The children are never so well developed as single births. Is a serious labour for the woman as ~~some~~ most serious fa: partum haemorrhage occurs here, & also convulsions. Reason of the haemorrhage is the over distension of uterus, it has a larger placental surface, & the labour is long. 1st: child is best. 1-to mothers die. (1-200 women all round).

Management. Labour with 1st: child is delayed, dilatation of os & descent of head slower, uterus remains big. Uterus acts

at a disadvantage. Slower still when breech comes first.

Birth of 1st. child same as in single births. Then there is a lull of 20-30 m. & the second child is usually expelled rapidly.

After birth of first, tie cord carefully. Keep hand over fundus & feel the 2nd.

Sit down by the bedside & make it your duty to deliver 2nd. within an hour, as after that the genital passages close afresh.

Tell the friends that there is a second but not the mother.

Are 2 extremes of treatment?

W. In Prague, they despise the second child & treat it like a placenta.

(2). In Vienna, they let the mother labour over it for an hour.

A medium course is best. After waiting 1/2 hour, for if, rupture the membranes of 2nd. child, & if head is presenting, keep the hand over the uterus; give ergot & labour may go on all right. If no pains come on, turn & deliver, but if head comes down & stays in the pelvis apply forceps. All difficulty comes after the child is born, when you must look out for p: p: haemorrhage, for which full preparations should be made after the birth of the first child.

In the case of second child, you should rather

squeeze than pull.

Never take hand off the fundus until the uterus has firmly contracted.

Finis.

July 19th. 1888.